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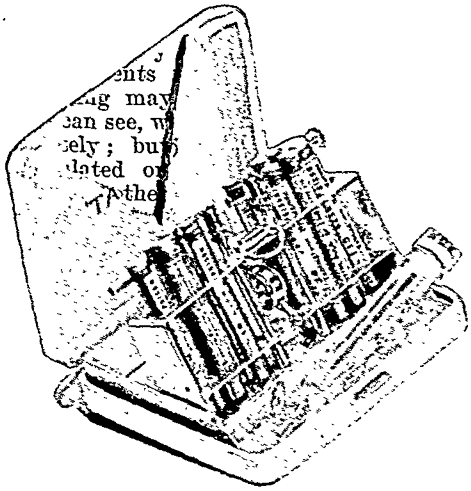

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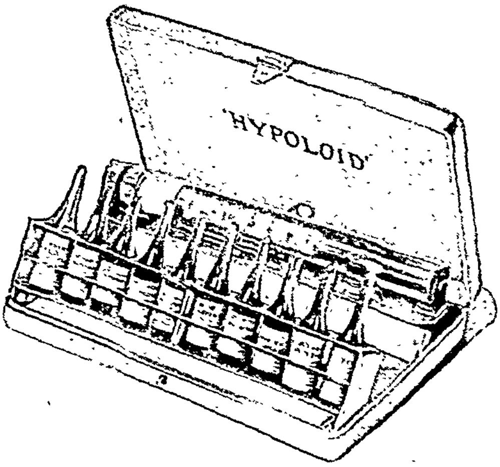

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ADDRESSES AND ORIGINAL ARTICLES

THE PSYCHOLOGY OF PERSONAL INFLUENCE *

BY WILLIAM BROWN, M.D., D.Sc., F.R.C.P.

WILDE READER IN MENTAL PHILOSOPHY IN THE UNIVERSITY OF OXFORD; HON. CONSULTING PSYCHOLOGIST AND HON. DIRECTOR OF THE PSYCHOLOGICAL LABORATORY, BETHLEM ROYAL HOSPITAL

A CONSIDERATION of the psychology of personal influence brings forward a problem of the utmost importance in the present stage of world history. With the increase of population, a more widespread education, and a more rapid dissemination of news and opinion, there is an increasing tendency towards group, crowd, or community activities. There is also—what is more significant—a tendency towards community thinking, of which I need hardly give examples. The possibility even presents itself that with these developments the art of individual or independent thinking may be lost. It is thought alone, so far as I can see, which enables us to insulate ourselves adequately; but there are signs on every hand of non-insulated or group thinking. People group together to do their thinking, putting themselves for this purpose under a master, whom they over-valuate, as he himself, in many cases, would be the first to admit.

The exercise of personal influence is only possible where there is an ability to respond to such influence. With a feeble-minded person, in whom there is no capacity for response, one is helpless. Adequate material is needed upon which the influence can be projected. As someone has put it, for successful propaganda it is necessary to have the "proper geese"! Nowadays there is a strong tendency towards selection in this respect. People quickly classify themselves, decide under what banner they will march, and look for a leader, whom they find, of course, inevitably sooner or later.

We find the reason for this immediately on a study of the history of the human race and its mental development. We have developed as groups—members of the family, to start with, going on to the clan, the tribe, the nation. We have had to carry on our struggle for existence, not only individually, but still more definitely as members of groups or societies of various kinds, so that the group or community spirit, or what has been called, inadequately, the herd instinct, is engrained in us. No one is free from it. It is not an indefinable and unanalysable thing. It has, indeed, been analysed by several psychologists, notably by Prof. William McDougall, also by Freud in his "Group Psychology and the Analysis of the Ego." What is still more interesting, we have the opinion of these two psychologists upon each other's position, for Freud has referred to McDougall in the work just mentioned, and McDougall has given a detailed criticism of Freud in one of the essays in the collective work, "Problems of Personality," the book published in honour of Dr. Morton Prince.

AUTO-SUGGESTION AS A REGRESSIVE PROCESS

In a former address[1] I showed how hypnotism could produce a reorientation of subconscious psychical forces, with a corresponding enhancement of will-power and transformation of character. A factor of central importance in the theory and practice of hypnotism is *rapport*, or the personal relationship between the hypnotist and the person hypnotized, and this it is necessary to consider in some detail. In order to produce an effect, an idea must be in relation with some source of mental energy. According to Freud's theory, the affective tendency concerned is of a sexual nature—not the tendency of ordinary sexual love, but a sexual tendency inhibited in its aim (*zielgehemmte*), manifested in a readiness to rely completely upon the hypnotist—in other words, the well-known factor of "transference."

At first sight all suggestion seems to be in essence auto-suggestion, because the patient is required to make the suggestion his own. But there is also the possibility that all suggestion may be hetero-suggestion—that the individual may never be able to accept anything from himself, but must always accept it from without, from people, from books, from events in the outer world, so that ultimately even auto-suggestion would be based on hetero-suggestion. Freud's leading follower in this country, Dr. Ernest Jones, in an article on the Nature of Auto-suggestion,[2] maintains with Freud that the success of hetero-suggestion is due to the re-arousal of early feelings towards the father, in which the hypnotist is put in place of the ego-ideal or super-ego. Those whom I am addressing will be familiar with Freud's theory of the narcissistic or identification type of love of a little boy towards his father, and the dependence or "anaclitic" type of love towards his mother, and the hostility, repression, and conflict which ensue. The conflict is between the child's ego and his ego-ideal, the latter corresponding with his conception of his father; later on this distinction, still within the domain of the unconscious, becomes that between the libido, or what Freud now calls *das Es*, and the super-ego. When a person is hypnotized he puts the hypnotist in the place of his ego-ideal. In auto-suggestion, still according to Ernest Jones, there is a regression, a stepping back to a still earlier psychological situation, a situation of primary narcissism, the fixation of the libido or sex emotional energy upon the self, not sexual in the adult sense, of course, but relating to those earliest years, when the sexual instincts have no independent means of finding satisfaction, but prop themselves up, as Freud says, against the self-preservative instincts. In the practice of auto-suggestion, according to Jones, the individual returns to this earliest stage, concentrating upon the idea of himself.

AUTO-SUGGESTION AS A PROCESS OF MENTAL DEVELOPMENT

As I have pointed out in a previous paper,[3] the narcissistic fixation on self which this theory supposes would be a pronounced form of regression, and therefore pathological or degenerative. It would mean an impoverishment of the ego by the withdrawal of energy otherwise available to the individual for getting into touch with the world around him. If this further development of Freudian doctrine is correct it is not easy to understand the beneficial effects of auto-suggestion in the improvement of physical health, nor the fact that the more normal and healthy a person is, and the greater his powers of concentration, the more effective is the practice of auto-suggestion in his case. It seems evident that, in face of the therapeutic results, some other way of explaining auto-suggestion must be found. It is well to point out that, as denoting a form of psychotherapy, the term "auto-suggestion" is inadequate and misleading. Taken literally, it usefully indicates the pathological effects of bad auto-suggestion, but it does not satisfactorily indicate the nature of therapeutic suggestion as a correction and improvement of function. Any regression to narcissism must also mean a stepping back from a state of health to some form of illness. It may be urged that any improvement through auto-suggestion is apparent rather than real, and that actually there is impoverishment of the mind and psychological injury. But it is not the experience of those of us who practise therapeutic auto-suggestion that our patients tend to become more self-centred; rather do they become more self-confident, less prone to fear of disease. As I have argued elsewhere,[4] auto-suggestion in its literal form is only a stage of a process of mental development towards an adequate form of volition. So far from being distinct from or a rival to volition, it is a contributory factor towards making volition complete. It restores to the individual a faith in himself, something quite different from narcissistic fixation and from the libido of the sex instinct. The instinct of self-assertion has its own form of energy, forming as sharp a contrast to the libido as the spirited principle to the appetitive principle in Plato's "Republic."

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* An address delivered to the section of psychology of the British Association on Sept. 8th.

[1] THE LANCET, 1932, ii., 1039.

[2] Brit. Jour. Med. Psychol., 1923, iii., 209.

[3] Brit. Med. Jour., 1928, i., 53 and 251.

THE LEADER AND THE LED

I turn now to Prof. McDougall's explanation of hetero-suggestion in terms of the instinct of submission, or of self-abasement, whereby the patient surrenders his own view and accepts that of another. McDougall holds that in the presence of the hypnotist the instinct of self-assertion is in abeyance.

As a theory of suggestion this seems to me to be too limited. The operation of *any* instinct, powerful, profound, and independent of other instincts, will increase suggestibility and produce suggestion effects. If the self-assertive instinct of an individual be aroused (in a state of relative dissociation) he will be made more suggestible in certain directions. The leader who is going to move a nation must have a strong self-assertive instinct, and be completely free from fear. If we look into the history of the world we find that those leaders who have had the most absolute power over their followers have been those who have never shown the slightest flicker of fear. If, later on, they have shown fear they have lost their prestige. Napoleon lost his power over his public when he showed fear, or at least gave evidence of a sinking heart, before Moscow, though some students of Napoleon say that he was falling even earlier than that, through the undermining processes in his own mind. To take a more modern instance, one felt that a certain dictator was destined to succeed when he had to face direct danger, and did not shrink or deviate in his activities when the assassin's bullet grazed his cheek. Julius Cæsar had power over his legions when they mutinied in Spain because, at the psychological moment, he appeared before them unarmed and made them a harangue. In all these cases the suggestion factor has nothing to do with the spirit of submission, rather has it to do with self-assertion. The true leader wants followers self-assertive like himself; he leads them, not by inspiring in them a feeling of fear or merely blind submission, but a feeling of confidence in himself and in his resources. I am referring, of course, to groups enlisted for dangerous enterprises; sheep are not dangerous!

I do not deny the importance of the instinct of self-abasement or of subjection in relation to suggestion effects; nor do I mix up suggestibility with suggestion. The title of my address, "The Psychology of Personal Influence," covers both suggestibility and suggestion. Suggestibility can be produced in many ways, not merely by inducing submission. When patients were hypnotized as a method of treatment of certain war injuries the hypnotist did not take up an attitude of superiority. All that was necessary was to arouse confidence in their minds, a very different thing from the instinct of submission. A timid, panic-stricken crowd is no good to anybody, but a good leader can make of a crowd a very powerful army, a race, a nation, which will alter the history of the world. It is of no use brushing that aside as regression or self-abasement. There is no self-abasement in a people who themselves are anxious to achieve a certain end. They follow their leader because they respect him, believe in him, and hope through him to achieve; not because they fear him. He enables them to believe in themselves. Moreover, a leader very soon finds that he has to follow his followers. The followers project upon the leader their conception of what a leader ought to be, and he has to be that, or be superseded. Is that like the working of the instinct of submission? Yet it is suggestibility. Individuals are more suggestible in groups because there their more primitive instincts are given a chance of greater play. Prof. McDougall himself elsewhere has explained why this happens, through the sympathetic induction of emotion or emotional contagion, because "each of the major instincts is so organised on its perceptual side that the expressions of the same instinct in other individuals are effective provocatives of the instinct in the perceiving individual."

FACTORS GOVERNING THE RESPONSE TO SUGGESTION

I have said that the operation of any instinct will *increase suggestibility*. A panic-stricken person will *respond vigorously to a suggestion of peril*; an angry person to a suggestion that he is being insulted; a paranoiac may quickly be led to interpret any remarks or actions as slights upon himself; a jealous person may lend a willing ear to suggestions whereby his jealousy is inflamed to ungovernable fury. Othello, under the influence of jealousy, responds to the suggestions of Iago, so that the latter did what he liked with the Moor—(see especially Act III, scene 3)—and there is no question of any help from transference or any self-abasement in that example. The only instinct working in Othello was a desire to continue to believe in the faithfulness of his wife and to maintain his ideal of her. Iago undermined that, and with it went Othello's confidence in himself, so that Iago made him more and more suggestible and open to his innuendoes.

Not only individual instincts, but also individual sentiments, functioning in relative dissociation from the rest of the mind, may be responsible for pronounced suggestion effects. It is quite unnecessary to argue, as Freud does, that the affective tendency is ultimately always of a sexual nature. We can accept transference *as a factor*; but if a suggestion effect is a response independently of reason (though not necessarily contrary to reason) it may occur through the activity of instinctive forces other than that of the libido. In every case there is relative dissociation, which means a tendency to regression, a stepping back to more primitive reactions. The leader of a crowd or group obtains his influence in that way.

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[4] *Science and Personality*, Oxford, 1929.

Prof. McDougall has defined suggestion as the acceptance of a statement or of an idea independently of logically adequate grounds for such acceptance. According to this definition, whenever we consciously act according to reason we are acting independently of suggestion, whereas when we act independently of—though not necessarily contrary to—reason, we are acting according to suggestion. The desire to do "what is right and reasonable as such"—in Henry Sidgwick's phrase—is a definite factor in our lives, but apart from such action according to reason, all action, by McDougall's definition, is under the influence of suggestion. This seems to fail to take account of the strong and suggestible emotional tendency towards "what is right and reasonable as such," which is really one of the great outstanding forces of the mind, protecting it from the contamination of the group mind, enabling the individual to keep his soul, not giving it away or sharing it with others.

Neither the sexual factor postulated by Freud nor the instinct of self-abasement upon which McDougall relies seems to complete the explanation. One of the affective tendencies, of special importance in this connexion, is the gregarious instinct, the "urge" to act in harmony with one's fellows. Freud interprets the action of this instinct again in terms of the libido, holding that the gregarious instinct in itself explains nothing, that in the group strong libidinal relationships spring up between the members towards one another, and between all of them and their leader, so that in the group the individual is bound in two directions, to his fellows and to the leader. Freud propounds a far-fetched theory to explain how this situation arose in prehistoric times, but no real evidence is supplied for it; it is all innuendo and analogy.

SYMPATHY AND FAITH

I maintain that I have an adequate theory of suggestion, distinct from Freud's and from McDougall's. Whereas Freud is content with the libido in its widest sense to explain suggestion, and McDougall emphasises the instinct of self-submission, I hold that a wider basis is needed. It is true that a glass of alcohol, various drugs, emotional intoxication of different kinds, and perhaps the mere fact of being in a group will make an individual more suggestible. But the suggestion, when it is made and the patient responds to it, is not necessarily due to any operation of the instinct of self-abasement. I have given suggestion treatment to many thousands of cases, and their recovery or improvement so far as it has taken place has not been due to the submissiveness of the patients to me. There are plenty of patients who come and long to be hypnotized, but no hypnosis follows, and there are others who are quite sure that they cannot be hypnotized, but are found to be very suggestible and hypnotizable. When one analyses it out, it seems to depend upon a congruence of the unconscious of the hypnotist and that of the hypnotized—deep calling unto deep. That is how a certain leader of the present day is proving himself a real leader (whatever one may think of his activities on political grounds). His own unconscious is absolutely identical with that of his people; he will have no admixture of foreign elements. It is not submission; his people are not of a submissive race, but they will follow such a leader because he evokes their faith and confidence. The same influence may be seen at work at a meeting or great demonstration when a speaker touches some chord, says something with which all agree. One sees all their heads moving forward, like a field of corn under the influence of the wind. It is not because they are submissive; it is because there is agreement in the realm of the unconscious, between the hypnotist, if one likes, and the hypnotized. And it is something like this that the patient expects in therapeutic suggestion.

The possibility is not excluded, of course, that in hypnosis archaic affective tendencies and beliefs may come to the surface and make themselves felt. But therapeutic auto-suggestion goes much further because it replaces the feeling of doubt and fear by a feeling of confidence. The result suggested can then occur, so far as it does not conflict with any of the fundamental laws of nature, and can occur to a maximum degree. The instinct of self-assertion (supported by its own distinctive form of energy, not by libido) may play a prominent part in bringing about a realisation or actualisation of the suggestion. I emphasise this instinct of self-assertion, because it is not referred to in the literature of the subject as of importance in suggestion effects, whereas, in my view, it is of the utmost importance. We have only to look at history at the present time to realise it.

But so far as treatment goes we have also to bear in mind the value of faith—faith, which is a will to trust the noblest hypothesis. By an act of faith, by a venture in that direction, the integrated personality, with all its reserves of instinctive energy, may be made to fulfil more adequately the purposes towards which auto-suggestion is half-blindly pointing. The act or attitude of faith means a movement towards wholeness, not only of the mind in its narrower sense, but of the mind in its relationship to the totality of the universe, in which the individual believes, and which he believes to be ultimately spiritual and friendly. That complete fulfilment, which depends upon faith, may be led up to by suggestion treatment of different kinds, but it goes, of course, beyond suggestion treatment.

PSYCHOLOGY AND PUBLIC AFFAIRS

So often nowadays in the affairs of nations and publics one hears a reference to the influence of the group or even to the hypnotization of groups, that there is a very real danger of being too ready to accept that as an explanation of suggestion. We may agree with Prof. McDougall when he says that the crowd, in becoming organised and differentiated, becomes less and less at the mercy of mass suggestion or the play of primitive instincts, and more and more capable of following a high ideal and of working as an organised group. The individual in that way may find that through the group he rises above himself instead of falling below his level. But we have to pull ourselves up with the recollection that psychology as a science has to deal with facts, not with social values or with philosophical or ethical concepts. The present task of psychology is to increase our knowledge of the facts and to reach an adequate hypothesis for the explanation of the working of those facts. It has no right, qua psychology, to pass beyond that province, and to lay down rules as to the working of the mind, or the manner in which masses should be organised, or the ideals which should be followed by the individual and by the race.

COUNTY LOUTH NEW MENTAL HOSPITAL.—This institution was recently opened by Mr. S. T. O'Kelly, Free State Minister for Local Government and Public Health. There is a central administration block 230 ft. long, with a tower 60 ft. high, a gilded cross surmounting its copper roof. Two wings, 420 ft. long, house the male and female patients respectively.

THE ADRENAL CORTEX AND SEX

THE INFLUENCE OF CORTICAL EXTRACT ON NORMAL AND CASTRATED RATS

By S. Levy Simpson, M.D. Camb., M.R.C.P. Lond.
A. Kohn-Speyer, M.A. Oxf., and
V. Korenchevsky, M.D. Moscow
(From the Lister Institute, London)

There is a considerable amount of clinical evidence of a close relationship between the adrenal glands, the sexual organs, and the secondary sexual characteristics. Most impressive are the numerous records of tumours of the adrenal cortex.

Changes associated with cortical tumours are usually those of masculinisation, but feminisation does occur. In young boys premature puberty (homosexual precocity) has been noted, with enlargement of the testis and penis and the growth of hair (Bulloch and Sequeira, 1905; Cecil, 1933). Actual spermatogenesis or potency is, however, lacking (Meyer and Frumess, 1931; Glynn, 1921). In young girls homosexual precocity has been observed (van den Bergh, 1932). More commonly heterosexual precocity occurs in girls, and Hoag (1923) reports enlargement of the clitoris, growth of hair, and development of a deep voice in a girl aged 4 years. In Bulloch and Sequeira's case (1905) there was a mixture of homosexual and heterosexual changes. The patient, a girl of 11, had menstruated since the age of 10, had breasts like those of a mature woman, with some enlargement of the clitoris and uterus, and yet grew hair on the chin and lips as well as pubis and axillæ. Mathias (1922) described a girl of 3 years of age, sexually mature, and with a beard.

In female adults, cortical tumours are associated with masculinisation. Thus in Holmes's (1924) patient, a woman of 24, there was a masculine growth of hair and enlargement of the clitoris; at the same time the uterus atrophied and menstruation ceased. With the removal of the adrenal tumour there was a return to normality. In male adults there may be a development of the breasts with secretion of the mammary glands and a female type of adiposity; simultaneous atrophy of the testis and penis and loss of libido also occur. With removal of a tumour there is a return to normality (Holl, 1930).

Thus a tumour of the adrenal cortex may apparently stimulate the development of male sexual characteristics and inhibit female sexual characteristics, or conversely it may stimulate the development of female sexual characteristics and inhibit male characteristics.

In Addison's disease amenorrhœa, absence of libido, impotence, and atrophy of the testis may occur. Adequate therapy with cortical extract tends to produce a return to normal sexual function (Rowntree and Snell, 1931; Levy Simpson, 1932).

INFLUENCE OF ADRENALECTOMY IN ANIMALS

The effects of adrenalectomy on sex organs might indicate a function of the adrenal gland. Freed, Brownfield, and Evans (1931), who review the voluminous literature on the effects of adrenalectomy in the male rat, find that most observers report degeneration of the tubules of the testis. In their own experiments the testes were pale, soft, and œdematous, and in immature rats were lighter than those of control animals; "histologically spermatic tubules were ragged, fragmented, and disorganised; clumps of cells lay in the lumina and often only the germinative layer remained in position; in the adult testis the spermatocytes were severely affected, staining ghost-like with eosin. The mature testis undergoes as great a degeneration as the immature." The gonad-stimulating hormone of pregnancy urine was found to cause hypertrophy of the seminal vesicles in the adrenalectomised rat, but the degeneration of the testis continued.

Carr and Connor (1933) noted loss of libido and potency and degeneration of the cells of the seminiferous tubules in the adrenalectomised male rat.

Martin (1932) obtained suppression or irregular appearance of the œstrous cycle in about 88 per cent. of adrenalectomised rats. The ovaries were one-third to one-half the normal size and contained solid masses of persistent *corpora lutea*; there were a few small follicles but no large mature ones. Homotransplants produced a return to normal. Fall of body-weight and diminution of food did not suppress the œstrous cycle in control animals; nor did the administration of vitamins A, B, D, and E prevent the changes following adrenalectomy in rats. Martin believes that the adrenals influence œstrus indirectly through the pituitary, since he found that (*a*) the gonad-stimulating hormone of the sheep's pituitary gland restored the cycle in adrenalectomised rats; (*b*) the hypophysis of adrenalectomised rats when transplanted had a gonad-stimulating power less than that of normal animals; (c) there was a decrease in size and staining reaction of oxyphil cells of anterior lobe of hypophysis of adrenalectomised rats.

Carr and Connor (1933) noted in the female adrenalectomised rat the cessation of œstrus, degeneration of corpora lutea, cessation of pregnancy by abortion, and absence of lactation. Corey and Britton (1933) also found that removal of the adrenal glands resulted in complete suppression of the œstrous cycle in about 90 per cent. of rats.

EFFECT OF INJECTIONS OF CORTICAL EXTRACT

A. Normal animals.—Corey and Britton (1931) produced precocious sexual maturity in male and female rats by the injection of cortical extract. The extract was prepared in their own laboratory according to the method of Swingle and Pfiffner. In the male rat there was no apparent increase in the size of the testis, but in histological section the tubules appeared larger in diameter, and the cells presented a closely packed or compressed appearance. Spermatogenesis was found from 35 days of age onwards, whereas in the control animals spermatogenesis did not occur before the 42nd day. "It is thus apparent that the testis does not respond to the extract to the same extent as does the ovary." No mention of prostate is made. The pituitary gland was found to be increased in size, especially the anterior lobe, in which there was a marked increase in the number of eosinophil cells. No macroscopic or microscopic changes were observed in the thyroid, parathyroid, and adrenal glands.

Klein (1931) using an extract prepared by Müller, untested for potency on adrenalectomised animals, obtained positive results in the male rat. The penis grew more rapidly in the injected animals, but its final measurement at the end of eight weeks was no greater than that of the controls. The epididymis and seminal vesicles were, however, more developed, and in one series the testis was larger. No effect on spermatogenesis was obtained. Müller (1931), using the same extract as Klein, obtained some inhibition of the female organs. Kaplan (1932) reviewed the work of Klein and Müller; and, using a series of extracts prepared in different ways, concluded that inconstant results are obtained with any one extract prepared by the same method for each experiment.

Atwell (1932) found that injections of suprarenal extract, prepared by Hartmann's method, produced considerable enlargement of the ovaries in hypophysectomised frogs.

In contrast to these findings there is a considerable amount of evidence contradicting the positive findings of Corey and *Britton.* Thus Gaunt and Parkins (1933) used an extract made according to the method of Swingle and Pfiffner, and assaying 20 dog units per c.cm.; their technique and dosage followed closely that used by Corey and Britton. In both male and female rats "no indications of precocious sexual maturity, or of other effects of prolonged treatment were observed." Carr and Connor (1933) also used an extract prepared according to the method of Swingle and Pfiffner, and tested for potency on adrenalectomised rats. They were quite unable to produce precocious sexual development. In a previous report Connor's results were also negative.

Robson and Taylor (1933) could produce no hypertrophy of the sexual organs of male rats. There was some evidence of an inhibiting effect on the testis, but their own work and that of Moore and Price suggests that similar inhibition and degeneration of tubules results from lipoid extract of heart muscle. The inhibiting factor may not be specific.

Cleghorn (1932), using an extract made according to the method of Swingle and Pfiffner, obtained negative results in male and female mice. Atwell (1932) found that cortical extract failed to repair the atrophy of the gonads or restore the interrupted œstrous cycle in hypophysectomised rats. Smith and Engle (1927) obtained completely negative results with adrenal transplants in male and female rats, although the same technique with pituitary transplants produced sexual precocity in both sexes.

B. Adrenalectomised animals.—Swingle and Pfiffner (1932) record that adrenalectomised dogs, maintaining good health with cortical extract, passed through normal periods of heat and pregnancy. Grollman and Firor (1933) found that cortical extract permitted adrenalectomised female rats to become pregnant, give birth to normal litters, and nurse them. Corey and Britton restored normal œstrus in adrenalectomised rats by injecting cortical extract or Theelin or Antuitrin S.

In contrast to the above results, Carr and Connor (1933) found that injections of a potent cortical extract (made and assayed after the manner of Swingle and Pfiffner) did not prevent or influence the changes in sexual function and structure following adrenalectomy in male and female rats.

THE PRESENT INVESTIGATION

The effect of a potent cortical extract on weight and histological structure of sexual, endocrine, and some other organs of normal and castrated male rats was investigated. The extract was made by Messrs. Allen and Hanburys, according to the method of Swingle and Pfiffner. Its potency had been assayed on adrenalectomised cats in the Laboratory of the Pharmaceutical Society (J. H. Burn) and had also been tested in severe cases of Addison's disease (Levy Simpson). The average daily dose of extract required to maintain an adrenalectomised cat alive was 3 c.cm.

Technique.—Five litters of normal rats and two litters of castrated rats were used. Each litter contained an average of five rats. Injections were usually by the subcutaneous route, but with the larger doses the intraperitoneal route was used. Injections were given twice a day and in two litters three times a day. The daily dose of cortical extract varied from 0·2 to 1·2 c.cm. The diet consisted of an adequate synthetic paste supplemented by liver and wheat germ (Korenchevsky, 1932); the food given and the residue were measured and weighed, and the daily intake recorded. Injections of the normal rats were commenced at the age of 22 and 23 days, and were carried out for 14, 21, and 28 days. Two litters were castrated when 26 days old; injections were started 6 days after the operation, and continued for 29 days in one litter and 42 days in another litter. The technique was that employed by Korenchevsky (1930, 1932). The organs were rapidly dissected, freed from surrounding tissue, and placed into Bouin's fixative fluid. All the organs were weighed the next day and then prepared for histological sections. As carried out in this laboratory the method of investigation has yielded accurate and constant results. The demonstrated influence of testicular and gonad-stimulating extracts on the sex glands, as shown by Korenchevsky and collaborators using this method (1932–1933), leaves no doubt that any similar influence of cortical extract, if present, should have been detected in these experiments.

The *results* were completely negative. Compared with the control rats there was no change in weight of the prostate, seminal vesicles, penis, testis, adrenals, thyroid, pituitary, thymus, liver, kidneys, spleen, and heart, or in fat deposition. Microscopic examination also failed to reveal any changes. No evidence of premature or accelerated spermatogenesis was obtained. The atrophy of the prostate, seminal vesicles, and penis that normally follows castration was of the same degree and character in the injected castrated rats as in the control castrated rats. The food intake and gain in body-weight of the injected rats was similar to that of the control rats; no deleterious effects of the extract were observed.

In view of the negative character of the results it seems unnecessary to publish complete data for all litters. In Table I., however, the detailed results in

TABLE I.—*Actual Weights and Weights Calculated per 200 g. of Body-weight of Sexual and Endocrine Organs of Rats*

No. of rat.	Groups of rats.	Testes.		Prostate and sem. ves.		Penis.		Adrenals.		Thyroid.		Hypophysis.		Thymus.	
		A	200	A	200	A	200	A	200	A	200	A	200	A	200
1 2	Control rats	2·440 2·289	2·440 2·461	0·460 0·486	0·460 0·523	0·228 0·233	0·228 0·251	34·0 35·0	34·0 37·6	25·0 20·8	25·0 22·4	7·0 7·0	7·0 7·5	0·417 0·374	0·417 0·402
	Average	2·365	2·451	0·473	0·492	0·231	0·240	34·5	35·8	22·9	23·7	7·0	7·3	0·396	0·410
3	Rats	2·535	2·392	0·533	0·503	0·230	0·217	31·2	29·4	17·8	16·8	7·6	7·2	0·391	0·369
4	Injected with cortical extract ..	2·347	2·510	0·449	0·480	0·225	0·241	28·8	30·8	20·4	21·8	7·4	7·9	0·370	0·396
	Average	2·441	2·451	0·491	0·492	0·228	0·229	30·0	30·1	19·1	19·3	7·5	7·6	0·381	0·383
	Percentage change ..	+3·2	0	+3·8	0	−1·3	−4·6	−13·0	−15·9	−16·6	−18·6	+7·1	+4·1	−3·8	−6·6

NOTE.—" A " denotes the actual weight of the organ; " 200 " denotes the weight of organ calculated per 200 g. of body-weight.

one litter are given to illustrate the method. In this Table, for economy of space, the changes in sexual and endocrine organs only are given, whilst in Table II. all average results for the seven litters are summarised.

TABLE II.—*Influence of Cortical Extract on Normal and Castrated Rats*

The average percentage change in weight of the organs of injected rats compared with control rats

—	Normal rats.		Castrated rats.	
	Actual weight.	Per 200 g. body-weight.	Actual weight.	Per 200 g. body-weight.
Testis	− 1·5	− 2·4	..	..
Prostate and seminal vesicles	+ 6·7	+ 5·8	− 9·1	− 0·9
Penis	+ 1·3	+ 0·5	+ 1·2	+10·0
Adrenals	− 0·4	− 1·1	−12·1	− 4·8
Thyroid	+ 9·1	+ 7·7	−16·4	− 9·7
Hypophysis	+ 4·6	+ 2·5	−13·5	− 6·7
Thymus	+ 3·5	+ 1·8	+ 4·2	+12·5
Fat (retroperitoneal or testicular)	+12·7	+10·2	− 2·1	+ 4·6
Liver	+ 7·5	+ 5·8	−10·0	− 2·4
Kidneys	+ 8·5	+ 7·2	− 5·0	+ 3·1
Spleen	+ 6·7	+ 5·7	− 8·0	− 0·1
Heart	+ 1·4	0	− 8·3	+ 0·3

DISCUSSION

The sum total of experimental evidence—with one notable exception (Corey and Britton, 1933)—indicates that the injection of cortical extract in normal rats is without obvious influence on the sex glands. The results of adrenalectomy on sex functions are, however, *difficult to interpret because of the coincident* changes in the appetite and metabolism of the animal and the concurrent dehydration.

Indirect evidence of a relationship between the sex organs and the adrenal cortex is suggested by hyperplasia of the cortex during pregnancy in guinea-pigs (Donaldson, 1924), œstrus in frogs (Atwell, 1932), ovulation in pigeons (*Riddle, 1923*), and following castration in rats (Korenchevsky, 1930). There is also an apparently close relationship between the adrenals and the hypophysis, and the hypophysis has a known influence on sex. Hypophysectomy in the rat is followed by hypoplasia of the suprarenal cortex (Smith, 1927). Clinically, aplasia of the suprarenal cortex occurs with hypopituitarism, whereas hyperplasia occurs in acromegaly (Moehlig, 1929).

The most striking evidence of a relationship between the adrenal cortex and sex is that shown by tumours. Can these clinical observations be explained on any other basis than a direct influence of the *adrenal* cortex on sex? It is conceivable that an undetected basophilic adenoma of the pituitary gland is associated with tumours of the adrenal cortex (Cushing, 1932). In such circumstances it might be postulated that the pituitary adenoma, and not the adrenal tumour, produces the changes in the sex organs. *Against this* hypothesis are the clinical results of removal of the adrenal neoplasm; although it might be suggested that this operation also inhibits the pituitary basophilic adenoma, should such be present. Another difficulty is the unilateral character of the neoplastic changes, and *the fact that the opposite adrenal gland* may be atrophied, as recorded by Rowntree and Ball (1933). Careful examination of the pituitary in all cases of adrenal neoplasm will decide whether such a hypothetical influence of the pituitary can be excluded.

Another hypothesis to be considered is that of Krabbe (1921). The cortex *arises from* the Wolffian ridge in common with the *ovary and testis, and it* may be that primitive sex cells are incorporated in the cortex. Thus the cells of a hypernephroma may arise from these primitive undifferentiated cells, and, therefore, influence sexual organs.

An alternative explanation would be that a cortical extract may contain the factor necessary to maintain life—but not the sex factor.

SUMMARY

It has not been possible to demonstrate any influence of a potent cortical extract on the sexual, endocrine, and some other organs of normal or castrated male rats. The difficulty of harmonising this finding with the clinical evidence of the influence of adrenal tumours on primary and secondary sexual characteristics is emphasised.

A grant from the Medical Research Council and the hospitality of the Lister Institute have enabled us to carry out the work and to them our thanks are due. We are also indebted to Messrs. Allen and Hanburys for supplying the cortical extract free of charge.

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MILLER GENERAL HOSPITAL.—At the annual meeting *of this* hospital last week Lord Queenborough, the president, stated, in illustration of the rapidly growing strain upon the out-patients' department, that, compared with *1931*, *the attendances had increased by* 50,000. Plans have been prepared for a *new* building which it is hoped to erect *in the near future*.

A CENTRAL MALARIA LIBRARY.—A malaria library was founded in Rome by the Stazione Sperimentale per la Lotta Antimalarica in 1925, and an index to malarial literature is issued annually by the station. *To make the library as complete* as possible all malariologists are asked to send books, reports, and articles on *malaria to it*, and photostat copies of any article in the library *may* be had for the cost of reproduction. All *publications* and inquiries should be addressed to the director of the station, Corso Vittorio Emanuele 168, Rome.

THE CLINICAL APPLICATIONS OF DINITRO-O-CRESOL

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(From the Courtauld Institute of Biochemistry, the Middlesex Hospital)

II*.—A STUDY OF MYXŒDEMA

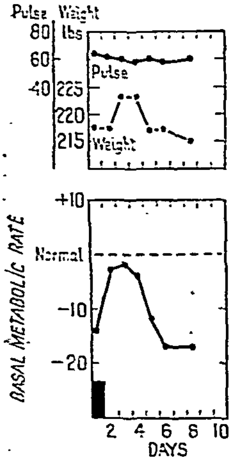

FIG. 2.—Effect of a single dose (290 mg.) on basal metabolic rate of the same patient.

In previous publications[1, 2] it has been shown that the administration of dinitro-o-cresol is attended by an increase in the basal metabolic rate in both animals and man, and that, further, it is possible to maintain the basal metabolic rate at a level some 30–50 per cent. above normal without the appearance of untoward symptoms. In view of these findings it was decided to investigate whether the administration of this compound would be capable of (*a*) increasing the basal metabolic rate of an untreated case of myxœdema, and (*b*) taking the place of thyroxine or thyroid extract in the alleviation of the specific symptoms of myxœdema.

The subject selected was a man, aged 42, who had had well-marked myxœdema and had been attending hospital for three years. The maintenance dose of thyroid required to keep his metabolism at a normal level and rid him of his symptoms of hypothyroidism was grs. 2 (B.P., 1932) daily. The administration of thyroid extract was stopped and the symptoms of myxœdema were allowed to develop. At this stage the basal metabolic rate as determined by the Benedict-Roth apparatus was −18. It was decided to repeat the experiments described in our last paper.

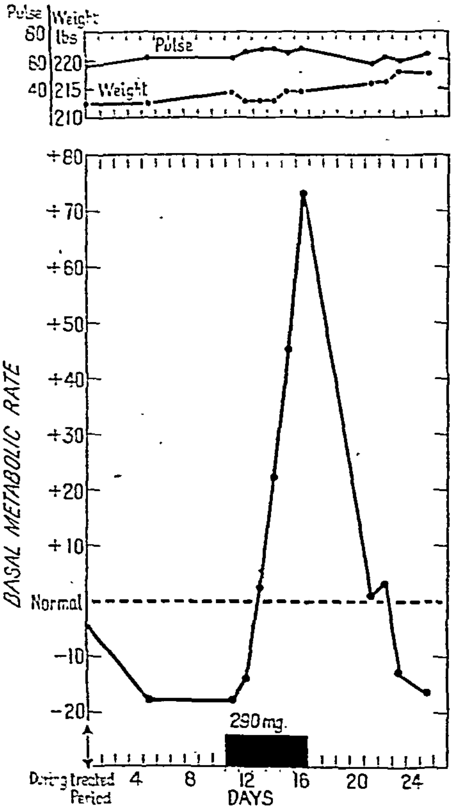

FIG. 1.—Chart showing increase of basal metabolic rate in a case of myxœdema on a dose of 290 mg. dinitro-o-cresol daily.

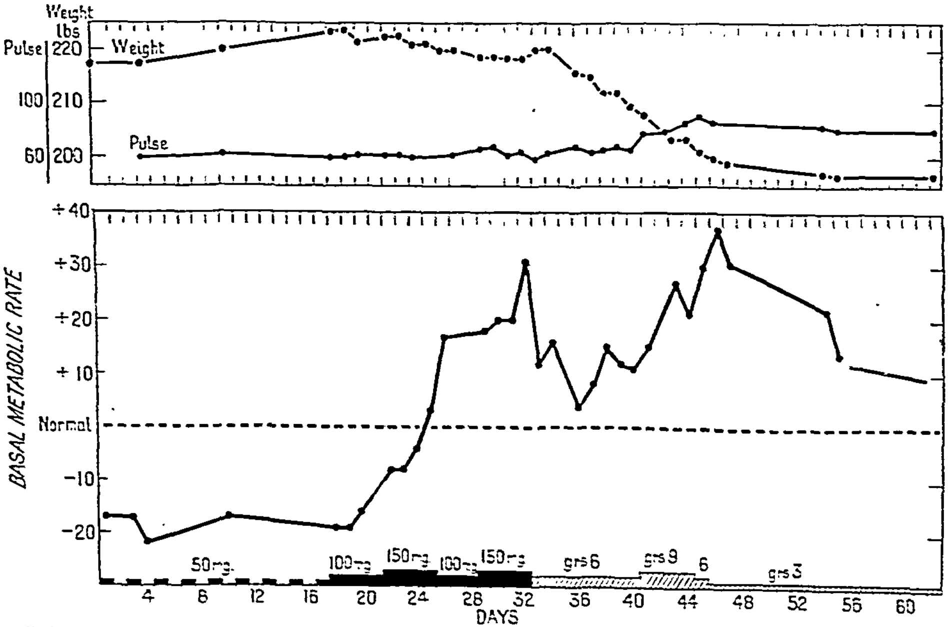

FIG. 3.—Behaviour of the patient's weight, pulse-rate, and basal metabolic rate under various doses of dinitro-o-cresol (mg.) and thyroid extract (grs.).

In the first place, the effect of administering dinitro-o-cresol by mouth in gelatin-coated capsules at the rate of 3 mg. per kg. body-weight was studied. From Fig. 1 it can be seen that the basal metabolic rate increased rapidly from −18 to +73 in five days. After the fifth day the administration was stopped owing to the appearance of the symptoms described in our previous paper. After withdrawal of the drug the basal metabolic rate fell rapidly to its original level, as occurred in the previous cases. From these observations it appears that the response of the myxœdematous patient is in no way different from that of the normal person.

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* Part I. appeared in the previous issue of THE LANCET.

The second series of observations consisted of administering a single dose of 3 mg. per kg. body-weight. From Fig. 2 it can be seen that the basal metabolic rate rises from −14 to −2 by the end of the second day and then falls rapidly to its original level. It appears from this that whilst the myxœdematous patient responds to a single dose in the same manner as a normal person the rise in this case is not so marked.

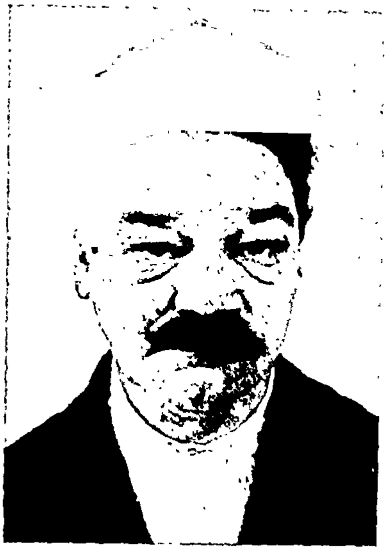

FIG. 4.—B.M.R. raised to +20 by dinitro-o-cresol. Myxœdema unrelieved.

In the third series of experiments, employing the information gained from the previous investigation, sufficient of the drug was administered to maintain the basal metabolic rate at a constantly increased level. It was found that in order to keep the basal metabolic rate of this patient above +20, 100 to 150 mg. per day had to be administered. In Fig. 3 will be seen the results of the administration during which the basal metabolic rate varied between +20 and +30. The clinical condition of the patient at this period was very striking. Although the basal metabolic rate varied between +20 and +30 he still presented the characteristic appearance of a severe case of myxœdema. Fig. 4 shows the appearance of the patient at this time, and it is interesting to contrast it with Fig. 5 which shows the patient's condition after ceasing the administration of dinitro-o-cresol and reinstituting the treatment with thyroid extract. The second portrait, with all evidence of myxœdema departed, shows the patient with a basal metabolic rate of +10.

Further reference to Fig. 3 indicates very interesting changes in the patient's weight. On stopping the thyroid extract the weight rises slowly until the basal metabolic rate is increased to +30 by the administration of dinitro-o-cresol. During the period that the basal metabolic rate is raised it can be seen that there is a slight fall in the weight. At the point, however, when the dinitro-o-cresol was replaced by thyroid extract there is a very sharp fall in weight. Reference to the pulse-rate is also interesting. The increase in pulse-rate during the administration of dinitro-o-cresol was very slight, but on the reinstitution of the thyroid extract in place of the dinitro-o-cresol, the increase is very marked. This again bears out the evidence brought forward in the previous paper which emphasised that no indication of the basal metabolic rate may be obtained by a study of the pulse-rate.

CONCLUSIONS

These results indicate very clearly that metabolic stimulants of the type of dinitro-o-cresol are of no use in alleviating the symptoms of myxœdema despite the fact that they are capable of causing an increase in the basal metabolic rate of the same order as in normal cases, and also of the same order as thyroid extract or thyroxine. The theoretical implications of these results are considerable. The relief of myxœdema and the power of raising the basal metabolic rate appear to be two separate functions, one of which is possessed by drugs of the dinitro-o-cresol type but both of which are possessed by thyroxine. Another possible explanation lies in the possibility that the increase in metabolism induced by dinitro-o-cresol may be different from the normal metabolic process.

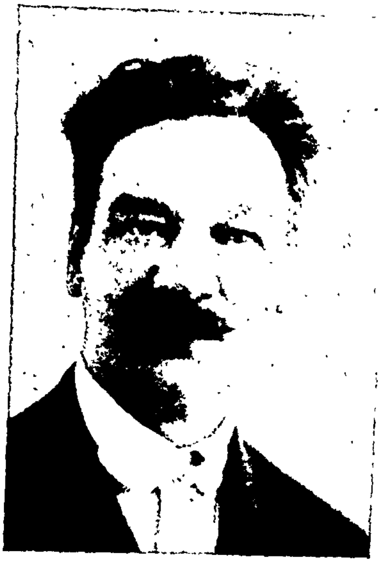

FIG. 5.—B.M.R. raised to +10 by thyroid. Myxœdema completely relieved.

Dr. T. Izod Bennett has kindly supplied us with the clinical facilities for performing this investigation. We have to thank British Colloids Ltd. for material and for a grant towards the expenses of this investigation. It is a pleasure to thank Dr. Trescott Brinkworth for his care and trouble in preparing the photographs.

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PELLAGRA:

ITS CLINICAL FEATURES AND PATHOLOGY

WITH OBSERVATIONS ON THE TREATMENT OF ITS NERVOUS MANIFESTATIONS BY MASSIVE DOSES OF IRON

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Pellagra is one of the very common endemic diseases of Egypt, although it is relatively rare in the surrounding countries, probably because of dietetic factors. The disease is almost confined to the fellah (farmer) class, but we very occasionally see it in a town-dweller when there is some predisposing factor, such as protracted diarrhœa.

Its incidence in Egypt has been variously estimated by different observers.

Sandwith[1] after ten years' study considered that between 35 and 62 per cent. of the total population were affected with the disease. His figures included very mild or "larval" cases which are often not included in pellagra statistics. At the present time this estimate seems to be too high. Stiven gives the incidence as 4 per cent.; on the other hand, H. Wilson[2] holds that Stiven's estimate was on the low side.

It is difficult to form an exact opinion as to its incidence owing to the difficulty of diagnosing early cases and to many other factors; figures from admissions to general hospitals are of little assistance to us in this respect. According to Wilson there was an increase from 1916 to 1922 which he relates to low wages and high cost of foodstuffs. It may be noted, however, that the years 1918–19 were exceptionally good economically. Whether there has been a similar increase in the last few years of economic stress is difficult to determine at present, since no statistics are yet available.

The cases of pellagra admitted to Kasr-el-Aini Hospital (K.A.H.) during the years 1920–30, as shown in the accompanying Table, progressively decreased from 129 in 1920 to 63 in 1930—in other words from 3 to 1 per cent. of the total admissions to the medical wards. This does not necessarily indicate a proportional diminution in the total number of cases in Egypt, for K.A.H. admits only very few of these patients, limiting itself to such cases of pellagra as are required for teaching purposes or cases showing special features of severity or interest; also frequently cases are admitted with pellagra, but suffering at the same time from anæmia, combined sclerosis of the cord, or splenomegalic cirrhosis, and the admission is therefore frequently recorded under one of these headings, the associated pellagra not being mentioned.

Cases of Pellagra admitted in K.A.H. compared with Total Admissions in Medical Wards

Year.	Cases of pellagra admitted.	Total admissions in medical wards.	Percentage.
1920	129	3407	3·7
1921	119	3500	3·4
1922	126	3700	3·4
1923	116	3916	2·9
1924	52	3132	1·6
1925	87	5236	1·4
1926	89	5442	1·6
1927	87	5834	1·3
1928	58	6149	0·9
1929	72	5589	1·2
1930	63	5752	1·09

Pellagra is commoner in Lower than in Upper Egypt. That this difference may have some relation to the kind of cereals principally cultivated seems probable, maize being largely replaced in Upper Egypt by millet, wheat, beans, and lentils. However, it is difficult to exclude other predisposing factors, such as differences in the incidence of helminthic infection, especially intestinal schistosomiasis.

CLINICAL MANIFESTATIONS

The disease is characterised by four sets of symptoms: cutaneous, digestive, nervous, and psychic.

THE SKIN

The first are the most obvious, and in the fully developed form consist of a symmetrical dermatitis affecting the exposed areas of the body—the forehead, a patch on each cheek joined by a band over the bridge of the nose giving a butterfly appearance, the skin over the mastoid process and around the base of the neck from the nape behind to a triangular area over the upper part of the front of the chest where the gellabia (clothing) opens (necklace appearance). In addition to the dermatitis a frequent characteristic feature over the face is a peculiar seborrhœa, the sebaceous glands being engorged with their contents, which form small, yellowish, slightly raised specks over the cheeks, nose, and forehead, giving these parts the appearance of having been sprinkled with grains of sulphur.

The dorsal aspects of the hands and of the distal parts of the forearms are similarly affected with the dermatitis, and the patches often extend for some distance over the volar aspect, but the phalanges are usually spared. The interdigital clefts show desquamation, and this appearance may persist long after the other manifestations have disappeared (washerwoman's hands). The dorsum of the feet is affected in the same way, except the part which is covered by the shoe. The affected parts are frequently the seat of burning pain in the early stages.

The dermatitis is not always entirely limited to these parts; affection of other parts of the body is seldom seen, but any exposed area may be involved, and we have seen a patient with a small round patch on the skin over his shoulder corresponding exactly to a hole in his garment. Points of friction are also attacked, the lesions there varying from mere roughness of the skin to actual hyperpigmentation and scaling, the more acute types of lesion, however, not being observed in these sites. The points of the elbows, the trochanters, the knees, and the sacral region are favourite friction sites; the genitalia are also sometimes affected. But in one case we observed big patches of hyperpigmentation, scaling, and roughness over the thorax and in the axilla, and neither sunlight nor friction could be claimed as exciting factors. This man had a particularly marked rash which extended above the knees and elbows (Case 4).

The type of rash varies according to the period at which it is observed. In the early stages it is usually a simple erythema, but sometimes in very acute and severe cases petechiæ or bullæ may occur and desquamation with oozing may supervene, forming the "wet type" of pellagra; secondary infection may complicate the picture, resulting in the formation of septic raw areas sometimes covered with scabs.

The initial erythema may progress no further, the rash clearing up to reappear during the next season. This erythema is sometimes very difficult to differentiate from ordinary sunburn. In the interval between attacks nothing may be left, but sometimes, especially after repeated attacks, the skin becomes rough and dry and its ridges exaggerated; hence the name pellagra. Scaling of the pellagrous areas results in a typical appearance, showing raw, pink, thin patches in the scaly dark skin. After some time these thin pink areas become brown and papery, the skin having undergone atrophy.

The more acute lesions are usually seen on the face and hands. These skin manifestations are considered by some observers to be the first manifestations of the disease and to be essential in its diagnosis, while many others hold that a variety exists (pellagra sine pellagra) where the skin is spared, the diagnosis being based in these cases on the gastro-intestinal and nervous manifestations. Sandwith calls pellagra a cerebro-spinal disease with cutaneous and digestive complications.[1]

THE ALIMENTARY TRACT

In many of our cases we found that nervous, or still more frequently digestive, symptoms or signs had preceded the rash by an interval of weeks or months. The digestive tract is attacked all along its length. Stomatitis, soreness and burning in the mouth, ulceration, and salivation are often complained of. The tongue is almost always glazed, with diminution or complete atrophy of the papillæ. Occasionally, however, we have observed a tongue apparently quite normal when the other signs of the disease, including dermatitis, have been marked. Epigastric pain, varying from mere discomfort to actual burning pain, anorexia, dyspepsia, and diarrhœa are almost constant, and achlorhydria is very common. Of our cases more than half showed an absence of free hydrochloric acid, and the histamine test usually produced no response.

Pathologically the mucosa of the whole alimentary canal is extremely thinned and atrophied, while in severe cases actual ulcerations are sometimes seen.

THE NERVOUS SYSTEM

The nervous manifestations are protean. On the sensory side, paræsthesias, tingling, and numbness, especially in the lower limbs, are the commonest. A burning sensation in these parts is sometimes noted. Rarely is there any objective loss of sensation, but the parts affected with the dermatitis may be slightly less sensitive to superficial stimuli. The deep sensations in our cases have usually but not always been preserved, and Romberg's sign has rarely been positive.

On the motor side, stiffness and weakness associated with increased reflexes is the change most frequently found, and cramps may be complained of; more rarely, weakness and wasting, associated with weak or lost reflexes, indicating a peripheral nerve lesion, are a prominent feature. These motor symptoms may be so severe as to cause the patient to be completely bedridden.

Even in the cases with markedly exaggerated reflexes it is exceptional to find other indications of pyramidal tract involvement, such as Babinski's sign or clonus. Ataxia is not uncommon, while tremors, especially of the face and upper limbs, may be observed. In one of our cases the picture of amyotrophic lateral sclerosis was associated with pellagra, while in another a nervous condition resembling disseminated sclerosis was followed by a dermatitis exactly similar to pellagra. Whether these cases were pellagra with nervous manifestations or pellagra on the top of these diseases was difficult to determine.

Some authors consider that the spasticity is of extrapyramidal origin. Margarot and Plagniol[3] described two cases in which they considered this system was affected. In one of these cogwheel rigidity was present, and both had diplopia and interference with accommodation. They call this a pseudo-encephalitic syndrome. Dorogan and Capri,[4] investigating 21 cases of pellagra, found that the normal relation between the chronaxie and the duration of the myogram which, according to Lapicque and Bourguignon's work, holds both in normal and pathological physiology, was reversed, the chronaxie in these cases being shortened while the duration of the contraction was prolonged. They concluded that the hypertonus in these cases was similar to that found in the parkinsonian syndromes and denoted a lesion of the mesencephalic centres (locus niger and globus pallidus).

The cranial nerves are usually spared, but diplopia and defective accommodation, and sometimes facial paralysis, have been recorded.

MENTAL CHANGES

Mentally we found these patients to be almost always dull, their cerebration being very slow and their memory usually impaired, while very often they mention events that have never happened. Hallucinations are frequent in late cases and, when this stage is reached, hope of recovery is usually very slight. Severe headache and insomnia are also common symptoms. Definite melancholia with suicidal tendencies may supervene, while some cases become maniacal, excited, and restless. Euphoria is sometimes observed, the patient believing he is cured and imagining he is very powerful, while he is bedridden and unable to move. The pellagrins in countries where pellagra is rife often constitute a large proportion of the patients in the asylums.

PATHOLOGICAL CHANGES

A characteristic feature of pellagra is that it affects the whole nervous system from the cortex to the peripheral nerves, the lesions being irregular and scattered, with no true systemic degeneration.

The changes in the peripheral nerves are considered by K. Wilson [2] to be a constant feature and are often very advanced. The myelin sheaths show irregular thinning, with only rarely fragmentation or complete Wallerian degeneration, while irregular small collections of lipoid material may be shown by Marchi's method of staining. Compound granular corpuscles can be found in the capillaries of the perineurium and mastzellen and peculiar granules showing metachromatic staining with thionin blue. The granules of Reich can be seen.[5] The nerve-fibres themselves are rarely affected, except in very advanced cases. There is usually some interstitial œdema but no collections of cells, and this absence of cells is constant all through the nervous system.

The posterior roots and to a lesser degree the anterior roots show the same changes.

The cells of the posterior root ganglia show varying degrees of swelling and atrophy, eccentricity of the nucleus, central chromatolysis, and deposition of pigment, which changes are also observed in the cells of the grey matter of the spinal cord, more especially in Clarke's column. The intermedio-lateral tracts show some diffuse degeneration and atrophy, while the anterior horn cells tend to show more chronic changes in the shape of gradual shrinking and atrophy; these latter cells are not usually constantly affected. Other observed changes are a loss of the neurofibrils, atrophy of the nucleus, and poor staining of the nucleolus.

This cellular destruction can be observed at all levels in the nervous system, the Betz cells in the cerebral cortex, the basal ganglia, the peri-aqueductal region, and the floor of the fourth ventricle being diffusely affected in the same scattered unsystematised way, while the Purkinjé cells in the cerebellum and the cells of the cranial nerve nuclei share in the same changes. Orton and Bender [6] draw a distinction between acute diffuse degenerative changes arising in the immediate antemortem period and affecting the spinal cord cells, the cerebral cortex, the basal ganglia, and the brain stem with acute chromatolysis, fatty degeneration, and neuronophagia, and more chronic changes, cell losses, gliosis and glial scarring affecting the lateral horns, the floor of the fourth ventricle, and the aqueduct of Sylvius. They hold the latter lesions responsible for the symptoms, which in their case were mainly vasomotor and gastro-intestinal.

The same absence of any inflammatory reaction is pointed out by Mott.[7] Chronic thickening of the ependymal lining with obliteration of the central canal has been described, a condition which, together with the diffuse degenerative changes and the absence of any inflammatory reaction, points to a chronic toxic process at work.

The pathological alterations in the white matter show the same irregularity, the most affected part being usually Goll's column, especially about the cervical region, as at that level the degenerated fibres which at lower levels were scattered have collected together, giving an appearance of systemic degeneration. Similarly the pyramidal fibres which are descending look more affected low in the lumbar region. The spino-cerebellar tracts are similarly affected but to a lesser degree, while the lateral columns are diffusely attacked, the lesions not being confined to the pyramidal tracts, a condition which K. Wilson calls "pseudo-systematised"—i.e., resembling combined sclerosis, but not confined to anatomical paths. The histopathological process, however, is similar to that of combined sclerosis—viz., œdema, myelin degeneration, compound glial corpuscles, and absence of inflammation.

Winkelman, in 1926,[8] pointed out the discrepancy between the diffuse and variable histological changes and the rather fixed clinical picture. According to him, the most frequent changes are fatty degeneration, chromatolysis, and pigment deposition, with chronic sclerosis of the posterior and lateral column fibres, of Clarke's column and Lissauer's zone, and increased glia in the nervous tissues and connective tissue in the ganglia. Experimentally, E. Mellanby [9] produced similar pathological changes in dogs on diets rich in cereals and poor in vitamin A. He found that ergot or rye germ could also produce these changes, but that an essential condition was deficiency of vitamin A, the administration of which prevented the appearance of these changes and cured them. The bearing of these experiments on ergotism is obvious, and Mellanby, extending his conclusions to pellagra, considers that, while the skin manifestations may be due to vitamin-B deficiency, the nervous complications are due to. or predisposed to. by vitamin-A deficiency, this explaining the rarity of pellagra in countries where yellow maize (rich in carotene) is consumed—e.g., Java and the Dutch East Indies—as compared with countries where white maize is cultivated.

THE PRESENT SERIES OF CASES

Of the 26 cases of pellagra which we have studied in hospital in the last 12 months. all had the typical rash, 24 had a glazed tongue, 21 showed nervous or mental manifestations (this includes cases showing only increased reflexes), and 15 had only cutaneous and nervous symptoms, while in 6 digestive symptoms were also present. Of the remaining 5, 2 had accompanying digestive disturbances and 3 had only cutaneous manifestations.

The cutaneous lesions were of the usual type, roughening, pigmentation, and desquamation predominating. The early skin changes were infrequently observed, erythema being present only in 5 cases. This is probably due to the patient taking the early manifestations for a simple sunburn and not coming for treatment until other symptoms appear. In many cases, however, even after careful inquiry, no history of any acute dermatitis could be obtained, the lesions, according to the patients. beginning as roughening with pigmentation and later exfoliation. The hands were affected in every case, the feet in practically every case. The neck was free in 5 cases.

The patients only rarely attended because of their cutaneous signs, and these were rarely the first manifestations of the disease, being usually preceded for varying intervals, extending sometimes up to nine months, by various disturbances; weakness, giddiness, vertigo, palpitations, and dyspnœa on exertion were the commonest. Severe epigastric pain and dyspepsia, accompanied in 1 case by vomiting, were marked in 6 cases. In 2 cases the disease began with paræsthesia of the lower limbs two weeks before the skin became manifestly affected, while in a third spasticity of the legs was the first thing the patient noticed. Diarrhœa frequently preceded the skin lesions, this being probably due in some of these cases to the not infrequent marked helminthic infestation.

The tongue and mouth were affected in practically every case. Only 2 cases out of the 26 were normal in this respect, and it may be of interest to note that both had achlorhydria. The usual finding is a glazed, shiny, raw tongue. In 2 cases this was accompanied by small ulcers with a sensation of burning or soreness in the mouth, and in 1 case bleeding gums were found.

Diarrhœa was found in 18 cases, in 1 of which no parasitic infestation of the bowel was present, and in 3 there was only ankylostomiasis. All the others had bilharziasis as well. One of the ankylostoma cases had attacks of diarrhœa recurring each season with the pellagrous rash.

Apart from diarrhœa and tongue affection, digestive disturbances were common and consisted of epigastric pain, continuous but increasing after meals, or of a sensation of burning in the same region, while the appetite was generally poor. These symptoms were found in 8 cases, while in only 1 case was vomiting a marked feature. Very frequently great difficulty was experienced in introducing the ordinary Ryle's tube for fractional gastric analysis, the patient often being unable to swallow it at first owing to hypersensitiveness of the nasopharynx; in other cases the meal was vomited early in the test. We could, however, analyse the gastric juice in 25 out of these 26 cases, and we found that 13 patients (52 per cent.) had achlorhydria. In these cases histamine injection produced no secretion of free acid, although in some cases the actual quantity of gastric juice was increased. The patients with dyspeptic symptoms had achlorhydria rather more frequently than the others—viz., 6 out of 8 (75 per cent.). There seemed to be no relation between the achlorhydria and the degree of involvement of the nervous system.

Neurological changes were entirely absent in 5 cases only. The knee-jerks were not present in 1 case and were very weak in another. They were, however, more commonly exaggerated (16 cases)—i.e., 18 cases in all showed some abnormality of the knee-jerk (80 per cent.). The ankle-jerks were brisk in 13 cases (50 per cent.) and absent in 1 case. True ankle-clonus was observed in 1 case only. It was associated with a knee-clonus and a bilateral extensor plantar response. This latter sign was found in 2 other cases and was then unilateral, while in 1 case it was indeterminate. The abdominal reflexes were usually brisk, but in 1 case they were absent.

Paræsthesias were present in 3 cases, while a fourth complained of cramps in the legs. The sense of position was usually retained, being doubtful in only 1 case; but the results of subjective examination could not be relied upon in these cases owing to the dull mental condition.

The most common mental abnormalities were dullness (5 cases) and melancholia (4 cases); one of this latter group apparently followed prolonged worry over impotence. In 1 case the patient was very irritable, nearly maniacal, while 2 patients had hallucinations. Insomnia was very marked in 1 case.

Not one of the 26 cases gave a history of similar affection in his family, although all the members were living under the same circumstances, having the same food, same drinking water, same clothing, and same work. Of the 26 cases 24 had some parasitic infestation, 7 only ankylostoma, 5 only *Schistosoma mansoni*, 12 both, in 3 of which there was associated ascaris. This high helminthic infestation rate of pellagrous patients, compared with the general infestation rate of the population of Egypt, suggests that infestation may play a part in the production of the disease and account for its occurrence in only certain members of a family, all of whom are on the same deficient, ill-balanced diet.

TREATMENT

No special treatment is necessary for the cure of the cutaneous and digestive manifestations. The ordinary hospital diet, after getting rid of any parasitic infestation, is quite sufficient to cure them, the rash usually disappearing within two to four weeks of commencing treatment. This, however, does not always bring about a cure of the nervous or mental manifestations. Once the latter have appeared in a well-defined form improvement is extremely difficult to obtain, but simple dullness or a feeling of depression easily disappears under this simple treatment.

Other treatments have been proposed from time to time, of which intravenous injection of sodium thiosulphate was suggested by Sabry.[10] We have tried this method without any apparent benefit.

Recently, however, Sargant[11] claims to have obtained recovery in cases of subacute combined degeneration of the cord associated with anæmia, Addisonian or otherwise, by the administration of Blaud's pill grs. 150 daily for six weeks. More recently he described one case treated on these lines with benefit, where there was no associated anæmia.[12] Cases of Addisonian pernicious anæmia under this treatment, without administration of liver, showed amelioration in the signs of nervous disorder without, however, showing any improvement in their anæmia. He concluded that the nervous changes are the result of the perverted iron metabolism, and can be corrected by these huge doses of iron. Analysis of his cases shows that, while the functional disturbances (ataxia, locomotion) have greatly improved, no extensor plantar response has ever disappeared, while the sensory disturbances, either subjective or objective, have only become diminished in intensity. It is probable that while early pathological changes, such as œdema, may disappear, neurons actually destroyed will not recover.

Owing to the similarity between the pathology of the nervous lesions of the anæmias described and that of the lesions accompanying pellagra, we tried this form of treatment in a few of our cases, and our results agree very closely with the results obtained in Sargant's cases—i.e., considerable improvement in the functional state of the nervous system with little corresponding changes in the nervous signs.

CASES TREATED WITH IRON

CASE 1.—Male, 17 years, fellah. Pellagrous rash over hands, feet, face, neck, and chest of one year's duration. Glazed tongue. Achlorhydria not responding to histamine injection. Ankylostoma and *S. mansoni* affection present. Unable to walk; brisk knee- and ankle-jerks; extensor plantar response on right side. No sensory disturbances. Red cells, 1,900,000; hæmoglobin percentage, 20. Blaud's pill grs. 150 daily for two months.

On discharge: patient able to walk unaided and gained much weight. Rash disappeared after second week. Red cells, 4,300,000; hæmoglobin percentage, 62 (Sahli method). Tendon-jerks less brisk than on admission. Right plantar reflex indeterminate.

CASE 2.—Male, 40 years, fellah. Complaint began with tingling and numbness of lower limbs two months before admission. Tongue glazed. Extensive pellagrous rash over feet, face, and hands extending to elbows. Seborrhœa of face. Achlorhydria not responding to histamine. Stools contained ankylostoma, ascaris, and *S. mansoni* ova. Mentally dull and euphoric, absolutely bedridden, brisk knee- and ankle-jerks; true ankle and patellar clonus easily obtained on both sides; bilateral extensor plantar response; superficial reflexes present. Sensations, superficial and deep, intact. Red cells, 2,200,000; hæmoglobin percentage, 26. Blaud's pill grs. 150 daily for six weeks.

On discharge: general condition much improved; weight increased considerably; red cells, 3,900,000; hæmoglobin percentage, 66; skin condition cured. He can walk without any support. No change, however, in the nervous signs; Babinski's sign, clonus, and brisk jerks still present.

CASE 3.—Male, 45 years, fellah. Has suffered from a pellagrous dermatitis during the last ten years. Weakness in the legs for four years and diarrhœa for six months. Achlorhydria not responding to histamine. Glazed tongue. Ankylostoma ova abundant in stools. Red cells, 3,700,000; hæmoglobin percentage, 42. Mentally the patient is dull and suffers from insomnia. He feels very weak on his legs. Brisk knee- and ankle-jerks; absent abdominal reflexes; plantar reflex flexor. No sensory disturbances. Blaud's pill grs. 150 daily for two months.

On discharge: patient feels much stronger and has gained much weight. Red cells, 4,900,000; hæmoglobin percentage, 80. Skin condition cured after three weeks' treatment. No change in the reflexes.

CASE 4.—Male, 25 years, fellah. Suffered from diarrhœa for the last two months and from pellagrous dermatitis for the last month. The rash extends up to above the knees, nearly up to the shoulders in the arms, and, in addition, there is a big patch over the back in the lumbar region and one near the right axilla. The face and neck are also extensively affected. Glazed tongue. Achlorhydria with no response to histamine. Stools contain ankylostoma and *S. mansoni* ova. Red cells, 3,500,000; hæmoglobin percentage, 55. Mentally the patient is dull. Plantar reflexes indeterminate. No sensory disturbances. Blaud's pill grs. 150 daily for six weeks.

Rash disappeared after the fourth week. Plantar reflexes flexor on discharge. Red cells, 4,700,000; hæmoglobin percentage, 80.

CASE 5.—Male, 35 years, fellah. Suffered from diarrhœa for the last six months. Weakness of legs for the last three months, and a pellagrous dermatitis for the last month. Is very emaciated. Tongue absolutely raw. Achlorhydria with no response to histamine. Red cells, 3,100,000; hæmoglobin percentage, 40. Absent knee- and ankle-jerks. Extensor plantar response on left side. No sensory disturbances. Blaud's pill grs. 150 daily for six weeks.

Result: no change in the reflexes. Patient died after six weeks from acute bacillary dysentery.

CASE 6.—Male, 30 years, fellah. For the last eight years had had yearly attacks of dermatitis in summer lasting four weeks. Skin of hands, forearms, neck, and legs shows hyperpigmentation. Tongue raw. Achlorhydria not responding to histamine. Red cells, 3,900,000; hæmoglobin percentage, 41. Ankylostoma and schistosoma affection present. Complains of severe headache, attacks of vertigo, general weakness, pains in knees and legs, and severe epigastric pain. Exaggerated knee- and ankle-jerks. Plantar response extensor on left side and variable on right side. Absent abdominal and cremasteric reflexes. No sensory disturbances. Blaud's pill grs. 150 daily for two months.

Result: great gain in weight and improvement in general condition. No headache or vertigo. Red cells, 5,100,000; hæmoglobin percentage, 78. No change in the signs of nervous involvement.

DISCUSSION

Witts[13] considers that the benefit seen in these cases is the result of improvement in their general health and not of any specific action of iron. On the other hand, Harris and Sargant[12] consider that the improvement is the result of the administration of these large doses of this drug, and they show equally satisfactory results in cases where nervous manifestations are not associated with any alteration in the blood picture from normal.

From a consideration of these six cases of pellagra it will be seen that, except in Case 5 who died of bacillary dysentery, definite improvement resulted from a six weeks' to two months' course of treatment in hospital on ordinary hospital diet and massive doses of Blaud's pill. Cases 1 and 2, who were unable to walk on admission, improved very markedly in their general condition, increasing very much in weight, and their hæmoglobin percentage rising from 20 and 26 to 62 and 66 respectively, and their red cells from 1,900,000 and 2,200,000 to 4,300,000 and 3,900,000 respectively.

Like the cases described by Sargant, despite the absence of any marked change in the physical signs of the nervous involvement, as the result of treatment, the symptoms in our pellagrous patients were very greatly ameliorated, so that even very severe cases were able to resume work. No special forms of encouragement or re-education in walking were practised; the patients were allowed to stay in bed until, feeling stronger, they began to get about the ward on their own.

All our cases suffered from a considerable degree of secondary anæmia, and so would be expected to show improvement in their general health as a result of the addition of iron to a well-balanced diet, but we consider that the change brought about by the iron medication was much more than could be accounted for by mere improvement in their general state. We have been unable to find cases of pellagra with nervous manifestations showing no anæmia, and so have been unable to observe the effect of treatment in such cases.

During our previous treatment of cases of pellagra with a well-balanced diet alone, without the addition of large doses of iron, the results obtained were much less satisfactory than those reported by us in the present series. We are, therefore, of definite opinion that the administration of iron with a well-balanced diet is of extreme importance in the treatment of cases of pellagra showing nervous manifestations, bringing about a more rapid improvement in the patient's condition than if treatment with diet alone is carried out.

SUMMARY

Of 26 cases of pellagra all had the typical rash; 15 had nervous manifestations, 2 digestive, 6 both digestive and nervous, and 3 complained of the pellagrous rash only. Only 2 cases showed a normal tongue. The non-cutaneous manifestations frequently preceded the cutaneous ones. Diarrhœa was present in 18 cases; only in 1 of these could parasitic infestation of the bowel be excluded. Achlorhydria was present in about half, and these patients showed no secretion of free hydrochloric acid on injection of histamine.

There seemed to be no relation between the degree of involvement of the nervous system and the condition of the gastric juice. The neurological changes were: a brisk knee-jerk (16 cases), a brisk ankle-jerk (13 cases), Babinski's extensor plantar response (2 cases unilateral and 1 bilateral), true ankle-clonus (1 case), absent abdominal reflexes (1 case). The only sensory disturbance was subjective, paræsthesia being present in 3 cases. No objective sensory loss was ever observed.

Not a single patient gave a history of a similar affection in other members of his family.

Some parasitic infestation of the bowel was present in 94 per cent., a high percentage compared with the general infestation rate of the rural population of Egypt. This may have a bearing on the fact that only one member of the family suffered from the disease where the dietetic and other conditions were identical for all.

Satisfactory results were obtained in 6 cases with nervous manifestations by giving massive doses of iron, on the lines suggested by Sargant for subacute combined degeneration of the cord.

We are indebted to Dr. Sargant for his kindness in furnishing us with details of his method of treatment.

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SPONTANEOUS DISLOCATION OF THE ATLAS

WITH REPORT OF A CASE

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LATE HOUSE SURGEON AT THE HOSPITAL

IN August, 1932, an engineer, aged 30, was admitted to the Birmingham General Hospital under the care of Dr. Stanley Barnes, complaining of curvature of the spine, stiffness of the neck, weakness of the right leg, and numbness, tingling, and weakness of the left forearm and hand.

Until five years before he had been an active, athletic young man. He then began to suffer from pain in the lower dorsal region, and within six months had developed a kyphosis for which he was treated by an orthopædic surgeon. A plaster-of-Paris jacket was applied and was worn for several months; the pain disappeared and he thinks that the kyphosis diminished. Twelve months before admission he again developed pain in the back, but on this occasion in the cervical region. He soon lost all rotatory movements of the head, the neck became more and more flexed, and latterly the chin had become so nearly in contact with the sternum that he could not open his mouth fully. He was treated by his own doctor as a case of rheumatism, and on the advice of Dr. Stacey Wilson was taking guaiacol carbonate capsules, and some improvement followed. In July, 1932, he experienced a weakness of the right leg, and found himself becoming awkward and clumsy with the left hand for the more intricate movements. It was at this stage that he was admitted to hospital for investigation.

The only point of interest in the previous history was the fact that at the age of 18 he had suffered from backache for a few days as a result of carrying a heavy drum. There was no history of syphilis, gonorrhœa, tuberculosis, or rheumatism.

He was a well-developed and muscular young man, with cardiovascular, renal, and pulmonary systems beyond suspicion. There was no urethral discharge, the teeth were sound, and the tonsils, though large, were apparently not septic; the oral pharynx was a little injected. The cervical part of the spine was rigidly flexed, with the chin almost touching the sternum, so that the mouth could not be opened fully, and there was much wrinkling of the forehead when the patient looked straight ahead. Lateral and rotatory movements of the head and neck were so diminished as to be well-nigh absent. The dorsal spine was kyphosed and movements were much limited; the lumbar region was normal in configuration and function. Neurological examination revealed a weakened grip in the left hand, an extensor plantar reflex on the right side, and a diminution of sensation for pain, heat, and cold in the right leg and foot. Manometric observations on the cerebro-spinal fluid by lumbar puncture showed that there was no spinal block: the fluid was normal both chemically and cytologically, and the Wassermann reaction was negative.

Radiography confirmed the presence of kyphosis and showed calcification of the cervicodorsal part of the anterior common ligament. It also revealed forward dislocation of the atlas on the axis, but there was no evidence of fracture of the odontoid process. On learning these findings the pharynx was examined with the finger, and one could feel, with startling ease, the anterior arch of the atlas projecting forwards behind the posterior wall.

with benefit, where there was no associated anæmia.[12] Cases of Addisonian pernicious anæmia under this treatment, without administration of liver, showed amelioration in the signs of nervous disorder without, however, showing any improvement in their anæmia. He concluded that the nervous changes are the result of the perverted iron metabolism, and can be corrected by these huge doses of iron. Analysis of his cases shows that, while the functional disturbances (ataxia, locomotion) have greatly improved, no extensor plantar response has ever disappeared, while the sensory disturbances, either subjective or objective, have only become diminished in intensity. It is probable that while early pathological changes, such as œdema, may disappear, neurons actually destroyed will not recover.

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There seemed to be no relation between the degree of involvement of the nervous system and the condition of the gastric juice. The neurological changes were: a brisk knee-jerk (16 cases), a brisk ankle-jerk (13 cases), Babinski's extensor plantar response (2 cases unilateral and 1 bilateral), true ankle-clonus (1 case), absent abdominal reflexes (1 case). The only sensory disturbance was subjective, paræsthesia being present in 3 cases. No objective sensory loss was ever observed.

Not a single patient gave a history of a similar affection in other members of his family.

Some parasitic infestation of the bowel was present in 94 per cent., a high percentage compared with the general infestation rate of the rural population of Egypt. This may have a bearing on the fact that only one member of the family suffered from the disease where the dietetic and other conditions were identical for all.

Satisfactory results were obtained in 6 cases with nervous manifestations by giving massive doses of iron, on the lines suggested by Sargant for subacute combined degeneration of the cord.

We are indebted to Dr. Sargant for his kindness in furnishing us with details of his method of treatment.

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SPONTANEOUS DISLOCATION OF THE ATLAS

WITH REPORT OF A CASE

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In August, 1932, an engineer, aged 30, was admitted to the Birmingham General Hospital under the care of Dr. Stanley Barnes, complaining of curvature of the spine, stiffness of the neck, weakness of the right leg, and numbness, tingling, and weakness of the left forearm and hand.

Until five years before he had been an active, athletic young man. He then began to suffer from pain in the lower dorsal region, and within six months had developed a kyphosis for which he was treated by an orthopædic surgeon. A plaster-of-Paris jacket was applied and was worn for several months; the pain disappeared and he thinks that the kyphosis diminished. Twelve months before admission he again developed pain in the back, but on this occasion in the cervical region. He soon lost all rotatory movements of the head, the neck became more and more flexed, and latterly the chin had become so nearly in contact with the sternum that he could not open his mouth fully. He was treated by his own doctor as a case of rheumatism, and on the advice of Dr. Stacey Wilson was taking guaiacol carbonate capsules, and some improvement followed. In July, 1932, he experienced a weakness of the right leg, and found himself becoming awkward and clumsy with the left hand for the more intricate movements. It was at this stage that he was admitted to hospital for investigation.

The only point of interest in the previous history was the fact that at the age of 18 he had suffered from backache for a few days as a result of carrying a heavy drum. There was no history of syphilis, gonorrhœa, tuberculosis, or rheumatism.

He was a well-developed and muscular young man, with cardiovascular, renal, and pulmonary systems beyond suspicion. There was no urethral discharge, the teeth were sound, and the tonsils, though large, were apparently not septic; the oral pharynx was a little injected. The cervical part of the spine was rigidly flexed, with the chin almost touching the sternum, so that the mouth could not be opened fully, and there was much wrinkling of the forehead when the patient looked straight ahead. Lateral and rotatory movements of the head and neck were so diminished as to be well-nigh absent. The dorsal spine was kyphosed and movements were much limited; the lumbar region was normal in configuration and function. Neurological examination revealed a weakened grip in the left hand, an extensor plantar reflex on the right side, and a diminution of sensation for pain, heat, and cold in the right leg and foot. Manometric observations on the cerebro-spinal fluid by lumbar puncture showed that there was no spinal block; the fluid was normal both chemically and cytologically, and the Wassermann reaction was negative.

Radiography confirmed the presence of kyphosis and showed calcification of the cervicodorsal part of the anterior common ligament. It also revealed forward dislocation of the atlas on the axis, but there was no evidence of fracture of the odontoid process. On learning these findings the pharynx was examined with the finger, and one could feel, with startling ease, the anterior arch of the atlas projecting forwards behind the posterior wall.

DISCUSSION AND REVIEW OF OTHER CASES

Dislocation of the atlas on the axis can no longer be regarded as a rare condition; indeed, there are numerous records of patients having survived the accident and having led lives of undiminished usefulness subsequently. The unusual feature of the case we describe is that we could not elicit a history of the slightest trauma, in spite of the most careful questioning; the dislocation was seemingly entirely spontaneous. That the trauma in these cases may be comparatively trivial is well recognised. Kelly,[1] in 1905, described the case of a man of 47 who, whilst under detention for drunkenness, fell in the police cell, striking his head on the floor. He sustained a forward dislocation of the atlas and a fracture of the odontoid process of the axis. Ogilvy[2] recorded the case of a boy of 11 who, whilst throwing a ball, dislocated his atlas in a forward direction. Both these cases recovered. In his paper Kelly demonstrated, by anatomical dissections, three possibilities:

1. Dislocation of the atlas accompanied by fracture of the odontoid process.
2. Dislocation accompanied by rupture of the transverse ligament of the atlas.
3. Dislocation accompanied by slipping of the odontoid process beneath the transverse ligament.

He maintained that the first only of these varieties was compatible with life, because in the other two fatal pressure on the medulla would inevitably occur; only by fracture of the process could this pressure be avoided. Subsequent experience has shown that absence of fracture of the odontoid peg does not necessarily result in fatal pressure on the medulla. In Ogilvy's case power was lost in both legs by the fourth day after the accident, but complete recovery had taken place by the eleventh day. He points out that medullary pressure symptoms may be either absent, slight, or delayed, and agrees that forward dislocation of the atlas is often associated with fracture of the odontoid process, and sometimes also with transverse fracture of the atlas.

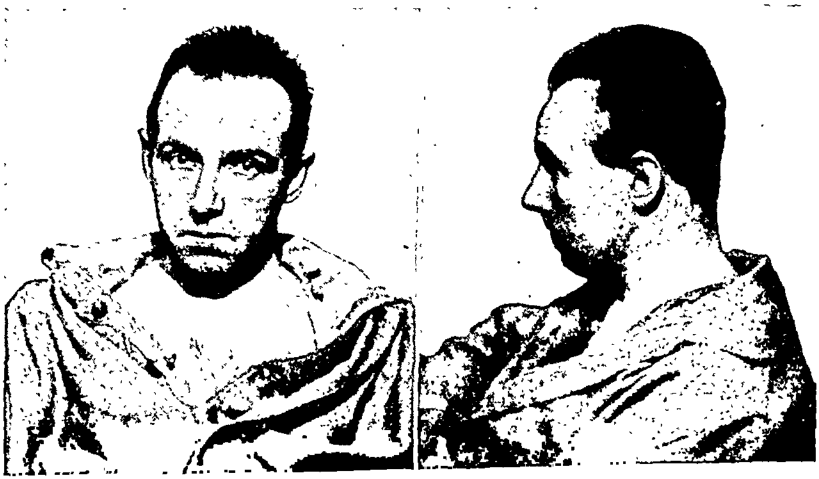

FIG. 2.—Photographs showing maximum degree of extension of neck. (Note wrinkling of forehead on attempting to look up.) These photographs were taken when treatment had been in progress for some weeks and considerable improvement had taken place.

Jacobs,[3] in an important paper, collected 24 cases of atlas subluxation. Two of these were fatal, 4 developed pressure symptoms, and 7 were associated with fracture of the odontoid process but remained free from signs or symptoms of medullary pressure. This series demonstrates that cases in ich the odontoid peg remains intact may yet survive, although they are more liable to pressure symptoms than are those in which the odontoid is fractured.

Of special interest to us are the two cases of spontaneous dislocation of the atlas described in the same paper. The first was that of a child aged 5 years who, during the course of a febrile illness, developed a spontaneous dislocation of the atlas; and the second was a male of 17 with a similar dislocation, but in this instance the author admits the possibility of slight trauma. He also recorded a third case in which a boy of 8 years had a temperature of 103·5° F., and complained of pains in the neck, elbows, and knees. The painful neck was found to result from a backward dislocation of the atlas and axis. Jacobs concludes that there is a definite clinical condition unassociated with trauma wherein one of the joints of the atlo-axoid articulation becomes involved, resulting in spontaneous dislocation. He compares it with pathological dislocation of the hip-joint in typhoid fever, and because it is due to an effusion into the joint he follows Wittek and terms it "distension-luxation" of the joint.

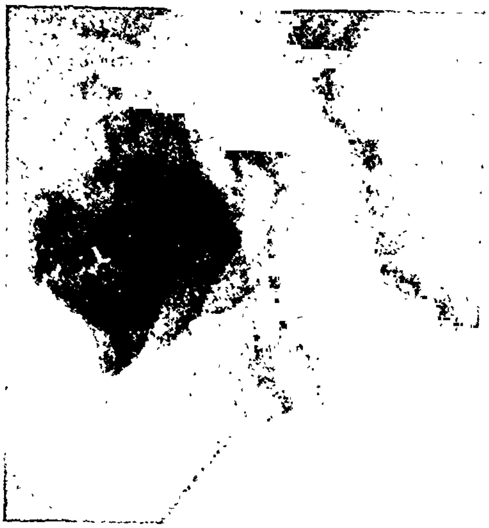

FIG. 1.—Radiogram showing forward dislocation of the atlas.

Wittek,[4] writing in 1908, recognised that dislocation of the atlas might result from tuberculous or rheumatic disease. He describes the case of a boy of 11 years suffering from an alveolar abscess who, on the fourth day of his illness, complained of pain in the back of the neck, and the head became flexed and inclined towards the right shoulder. Radioscopy showed a luxation forwards of the atlas upon the axis. Wittek held that in this case, which is the earliest of its kind we have been able to find recorded, a metastatic effusion had taken place between the odontoid process and the anterior arch of the atlas, and between the transverse ligament of the atlas and the odontoid. This had caused a stretching and weakening of the ligaments, thus allowing the dislocation to take place; he thought it improbable that any tearing of the ligaments had occurred, as he considered that this would have resulted in sudden pressure by the odontoid upon the medulla with instantaneous death. Fitzsimmons[5] mentions a similar case, a girl of 11 years, in whom a partial dislocation of the atlas was discovered four months after a mastoidectomy had been performed.

Mr. Robert Milne informs us that he has seen several cases of spontaneous dislocation of this nature, mostly in young people, in association with rheumatic fever; in two cases with endocarditis. His view of the matter is similar to that of Wittek, and he thinks that these patients develop an inflammation of the bursa between the odontoid process and the transverse ligament, so that the latter softens and stretches, thus allowing the dislocation to take place. He points out that if the ligament gives way suddenly, so that the odontoid process presses backwards into the medulla oblongata, sudden death will almost certainly result. Indeed, sudden death in endocarditis may, in a few cases, really be due to this and not to a supposed myocardial failure.

COMMENTS

It would seem, therefore, that the case now recorded falls into the category of spontaneous dislocation. It was of rather gradual onset, and early neurological signs and symptoms were present. The point in which this case differs from those to which reference has been made is that the dislocation did not occur during the course of an acute febrile illness but during an essentially chronic malady. This malady, like its kindred diseases osteo-arthritis and chronic infective arthritis, is probably of toxic origin, though no focus of infection could be discovered whilst the patient was under our observation; this, of course, does not exclude the possibility of one having been active years before. The diagnosis of tuberculous disease is negatived by the X ray picture (Fig. 1) which revealed no evidence of erosion or destruction of bone. The hypothesis that the dislocation is due to softening of the transverse ligament by pressure from an effusion into the bursa, aptly described by Wittek as "distension-luxation," appeals to us as the most satisfactory explanation, and we find ourselves in entire agreement with him and Mr. Milne.

TREATMENT

One of us (F. A. R. S.) was asked by Dr. Stanley Barnes to treat this patient, and the problems for consideration were many. It was felt that any attempt to reduce the dislocation, either immediately by manipulation under anæsthesia or gradually by traction extension, followed in either case by fixation in plaster, would be unwise, as we thought it unlikely that the ligament would regain its normal length and sufficient strength to bear the weight of the head without some supporting apparatus. Once having applied the supporting apparatus one would hesitate to allow its being discarded for fear of a second dislocation, this time of sudden onset and with fatal medullary pressure; the apparatus would have to be worn permanently. Another point against immediate reduction was that the sudden release of pressure on the medulla might lead to a fatal medullary œdema. It was therefore decided to fix the head and neck in plaster in its flexed position, hoping that the active stage of his disease would settle down and allow of consolidation in the new position: and that eventually he would be able to manage without any form of apparatus. The plaster case was applied, and his neurological signs and symptoms rapidly disappeared. About six weeks later the plaster case was renewed as the first one had worked a little loose, and when the first case was removed it was realised that the chin was not as close to the sternum as when we first saw him. When, a further six weeks later, the second case was removed for renewal the position showed further improvement; and so much better was the position two months ago (Fig. 2) that the plaster case was replaced by a leather collar. This slow but definite improvement of position was unexpected; it will be interesting to see how much more will take place.

CONCLUSIONS

(1) Forward dislocation of the atlas on the axis is not exceptionally rare. (2) It does not necessarily prove fatal, though it is more likely to do so if the odontoid process remains intact. (3) Though usually associated with trauma (and this sometimes quite trivial) it may be essentially spontaneous, occurring during the course of: (*a*) acute rheumatic fever in any of its clinical forms; (*b*) septicæmia; and (*c*) chronic non-specific arthritis of the spine (spondylitis deformans). (4) The hypothesis that the dislocation, when spontaneous, is a "distension-luxation" is supported.

We acknowledge with thanks our indebtedness to Dr. Barnes for referring this case to us, to Mr. Milne for his valuable information, to Dr. H. Black for his excellent radiograms, and to Dr. Wilson for the past history of the case.

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Clinical and Laboratory Notes

UNUSUAL SKIN REACTION FOLLOWING NEMBUTAL ADMINISTRATION

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IN an annotation on barbiturate skin lesions in THE LANCET of August 12th of this year reference is made to an unusual type of skin reaction resembling an acute bedsore, which was described by Coste and Bolgert. The following case is perhaps worthy of record not only because of the severity of the skin lesions which closely resembled those described by the French authors but also because the drug responsible was nembutal, now used so extensively as a preliminary narcotic in surgical practice.

The patient, a woman of 61, was admitted to the Victoria Infirmary, Glasgow, in July of this year suffering from gall-stones. The pre-operative preparation included nembutal grs. 1½ on the night previous, and nembutal grs. 3 one hour before operation the next morning. The operation itself was uneventful, a small thickened gall-bladder with stones being removed under ether anæsthesia.

About four hours after operation, and while the patient was still in a semiconscious state, a series of large urticarial wheals appeared over the front of both thighs. Within 24 hours those on the right thigh began to coalesce and became bullæ, containing clear serous fluid. Necrosis of the dermis gradually supervened, and an extensive area corresponding to almost half of the front of the right thigh was covered by an irregular greyish slough resembling a large bedsore. Separation of the slough was completed in a month, and subsequently the surface epithelialised rapidly, aided by the persistence of small diamond-shaped areas of uninvolved skin throughout the raw area, which corresponded to the original spaces between the bullæ.

The lesions on the left thigh remained erythematous and discrete, faded rapidly, and had disappeared by the sixth post-operative day.

In the cases cited by Coste and Bolgert the lesions occurred in areas subjected to pressure and in patients comatose for relatively long periods. In the above case, however, the question of decubitus did not arise, nor was the patient comatose or semi-comatose for longer than eight hours. It appears therefore that the lesion was attributable solely to a trophic disturbance arising from the action of the nembutal, and that no additional factor such as local pressure or sepsis was necessary.

HÆMORRHAGE FROM THE NIPPLE DUE TO A BENIGN INTRADUCTAL POLYP

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HÆMORRHAGE *from the nipple, unless due to trauma or inflammation, is usually accounted a serious sign, and is in fact more often than not the first indication of a lesion which necessitates amputation of the breast. Nevertheless, bleeding is occasionally caused by a strictly benign neoplasm, and the case here recorded is an example. It is evident that, where the possibility of a benign tumour is suspected, the growth should be subjected to careful pathological examination before the patient is condemned to a mutilating operation.*

The patient, a married woman of 32, complained of a mass in right breast which had been noticed one year previously. Two years before she had a brownish watery discharge from the nipple which had lasted one week. This recurred one year later and she then noticed the lump. In November, 1928, about six weeks before admission, she complained of "painful inflammation" of the breast and a bloody discharge from the nipple. The latter lasted ten days. Menstruation was regular and normal. She had one child, aged 11: no other pregnancies.

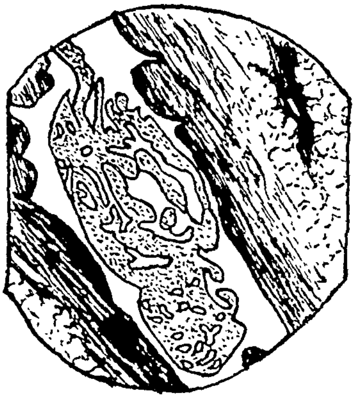

FIG. 1.—Outline drawing of the intraductal tumour.

On admission (January, 1929) several small nodular masses were felt in the region of the nipple. These were excised on Jan. 16th, about seven days before the next period was due.

Pathological examination showed that the "nodules" were dilated ducts, surrounded by small groups of lymphocytes. Most of them showed nothing very remarkable. The largest duct, however, contained a pedunculated mass of tissue between which were spaces lined by columnar epithelium like that of normal ducts. Some trabeculæ formed finger-like projections, but most were merely separated by distorted ducts. The fibrous tissue was of the hyaline variety and contained few nuclei. At the distal end was a bulbous projection consisting of hyaline fibrous tissue in which was a group of branched ductules comparable to those of a premenstrual lobule. The epithelial cells lining these ductules were swollen and vacuolated. Some resembled those of the late premenstrual phase, but most would have been assigned to the menstrual period, when degeneration would have already begun. However, when these cells were compared with those of neighbouring normal lobules, it was found that the latter showed a considerable degree of vacuolation, more than is usually seen seven days before a period. Unfortunately it is not known when the next period occurred; it may have come on earlier than was expected. In any case there was a surprising correspondence between the distorted lobule in the tumour and the normal breast lobules.

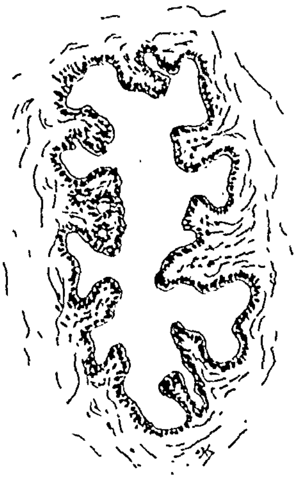

FIG. 2.—A large duct belonging to a normal breast in the interval phase with small (resting) ducts lying in a corrugation of its wall. To illustrate the first stage of polyp formation.

The structure of the tumour was that of a fibro-adenoma, distorted by pressure from the walls of the duct. The tumour was definitely benign. The patient returned for examination Sept. 22nd, 1932 (three and a half years after operation), and nothing abnormal could be found in the breast.

Fibro-adenomata commonly invaginate and encroach upon ducts, but an intraductal stalked tumour of this type is not often seen. The mechanism of its production is probably as follows: Groups of small ducts are often found close to the wall of a large main duct. When the latter is empty, its walls are folded, and sometimes the small ducts are included in a fold. During the premenstrual phase the small ducts bud and form a lobule. Normally the lobule remains in the connective tissue outside the main duct, but it may happen that the fold does not straighten out when the lobule forms, and so it may grow into the duct lumen instead of away from it. Fig. 2 explains this. The lobule, distorted by pressure and perhaps unable to obtain its full blood supply, cannot undergo its normal involution, and a vicious circle is established resulting in the formation of a tumour. Mechanical irritation of the surrounding parts and slight trauma would easily account for the bleeding.

BIRMINGHAM HOSPITAL SATURDAY FUND.—At the annual meeting of this fund last week it was reported that the collection to date amounted to £130,933, an increase of £14,629 over the corresponding period of last year. Earlier payment by some firms partly accounts for the difference, but 48 more business houses have joined the fund during the year, bringing the total number of contributing firms to over 5000. There are more than 310,000 weekly contributors. During the first half of the year £60,000 was paid to the contributory association, and the proportion of the cost of treatment now paid is 68 per cent., against 63 per cent. last year. Patients treated in the fund's seven convalescent homes during the year numbered 7026, an increase of 874.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF OBSTETRICS AND GYNÆCOLOGY

AT a meeting of this section on Nov. 17th, with Mr. EARDLEY HOLLAND in the chair, the subject of discussion was the investigation and treatment of the

Toxæmias of Pregnancy

Dame LOUISE McILROY, in opening the discussion, said that our knowledge on the metabolic processes of normal pregnancy and the pathological changes occurring as a result of functional deficiencies in the maternal organism was very limited. The London committee on eclampsia found that the total mortality of the cases investigated was 22·1 per cent. The greatest number of deaths occurred in patients who had convulsions after labour was over. Toxæmia was also responsible for hæmorrhages before and after parturition in a number of cases. It was a predisposing factor in puerperal sepsis, urinary tract infections, and puerperal insanity. In the Royal Free Hospital during ten years the maternal mortality was 2·8 per thousand in 12,085 patients. Hæmorrhage and obstetric shock accounted for 31·3 per cent., sepsis for 22·8 per cent., and toxæmia and eclampsia for 20 per cent. Miss Rodway had investigated the after-results of toxæmia in 50 patients, i.e., 34 primiparæ, 16 multiparæ. Among the former there was no history of previous renal complications in 6, but 2 had chronic nephritis and 9 raised blood pressure without albuminuria, and 4 had headaches and giddiness. In the 16 multiparæ, 6 had no renal complications in previous pregnancies, 2 had albuminuria, 2 had raised blood pressure, and 2 had headaches. In 8 multiparæ there was a history of previous renal complications, 2 had chronic nephritis, 4 had raised blood pressure. Dame Louise said that the waste of fœtal life in toxæmia is almost incalculable, but is more marked in cases of renal damage. In stillbirths maternal toxæmia accounted for about 24 per cent., obstructed labour and injury at birth for 20·5 per cent., while placenta prævia, renal disease, prematurity, and breech presentations gave a figure round about 9 per cent.

Toxæmia was not a marked feature of pregnancy between the 16th and 30th weeks, as in this period the maternal and fœtal metabolic relationships seemed well balanced. In the campaign against toxæmia the important periods were the beginning and the end of pregnancy. As the speaker had pointed out in 1922, the ovum could be regarded as a temporary endocrine organ, and if it adapted itself to other endocrines, the pregnancy ran a normal course. There was great activity in the endocrines in early pregnancy, and this had a special influence on the carbohydrate and calcium metabolism.

Among the suggested ætiological factors in toxæmia were the following :—

(1) A toxic ovum associated with abnormal decidual reaction with hormones pouring into the blood stream. The chief agent of curtailment is probably the filtration action of the placenta. No investigation of a patient can be considered complete without the coöperation of the biochemist.

(2) Defective maternal excretion is due to previous renal damage, as in the case of multiparæ; it is rare in primigravidæ. Chronic intestinal stasis is important as it prevents elimination. Chief attention should be bestowed on the investigation of lowered renal function, together with faulty intestinal elimination.

(3) Deficiencies in diet are responsible factors. In later pregnancy especially the fœtus needs a considerable supply of mixed substances, such as iron, calcium, and glycogen. If these are not maintained in the mother, the fœtus drains the parent's tissues for its own requirements. Absence of sunlight and fresh air are also factors.

(4) Defective endocrine secretions are of importance as a cause of toxæmia, as shown by the improvement following the use of such glandular extracts as those of corpus luteum, thyroid, and the anterior pituitary lobe.

(5) Septic foci, as in teeth and tonsils, also play a part.

(6) Anxiety neurosis or fear—these are of the greatest importance. They are mostly found in primigravidæ, and are a prime cause of vomiting in early pregnancy. The condition is most successfully dealt with by rest and isolation, and the assurance of safety.

(7) Placenta and hepatic function. This is of chief importance in later pregnancies. If the placenta is a defective filter for toxins passing from the fœtus to the mother—possibly also vice versa—the results are serious. The detoxicating function of the liver is liable to become overworked, and so it breaks down, with accompanying degeneration of its cells. If this is not neutralised by carbohydrate diet, a fatal result may ensue. In every pregnancy there is a tendency to acidosis.

(8) In later pregnancy it is important to consider raised intra-abdominal pressure as a factor in causing toxæmia. The increasing needs of the fœtus and the greater excretion of waste products are not the only cause in cases of twins, frequently associated with toxic symptoms in the mother. Hydramnios also, by its bulk, is associated with a great rise in intra-abdominal pressure.

It was impossible to have any accurate estimation of the condition without a thorough analysis of the blood and urine at frequent intervals. Albumin in the urine might be of great value, but some of the fulminating types of eclampsia did not manifest this danger-signal until convulsions had occurred. In cases of chronic nephritis œdema somewhat depended on protein starvation. Sodium chloride retention as a cause of œdema could be counteracted by giving a salt-free diet.

Treatment of toxæmia in early pregnancy.—Colon lavage, enemata, baths, &c., should be employed to make up for defective secretion; and in addition the toxins could be diluted and largely neutralised first by fluids, and then by suitable diet. The latter should be mixed, and consist especially of salads, fresh butter, fish, and chicken. To get more rapid results, calcium, glucose, or alkalis could be given. Sunshine, natural or artificial, was a great auxiliary. Should the patient's progress be disappointing, surgery might be necessary. In early pregnancy if vomiting was severe and did not improve in three or four days abortion should be induced in case of deadly hyperemesis. This was a rare condition. It was wrong to wait long in the treatment of toxic vomiting; one should make the ovum go "while the going was good." In the Royal Free Hospital no inductions of abortion had been done for vomiting alone. Indications for this operation were pulmonary tuberculosis (23 per cent.), heart disease (17 per cent.), nephritis (8 per cent.), toxæmia with dead ovum (8 per cent.), toxæmia with living ovum (5 per cent.). Dame Louise's view was that surgical interference in early pregnancy was rarely necessary in cases of toxæmia, but in a number of cases of chronic nephritis the operation was advisable. The majority of women were anxious for their pregnancy to continue. It was the practice at her hospital to continue pregnancy in cases of renal damage, but to forbid further pregnancies.

Treatment in late pregnancy.—In later pregnancy there was less anxiety neurosis, more metabolic disturbance. The two main reasons for inducing premature labour in these were: (1) if the mother's life was spared but the toxæmia was prolonged, the ultimate damage to liver and kidneys was serious. Prolonged toxæmia had a marked effect in the way of kidney damage. (2) Labour might have to be induced because otherwise the fœtus might die in utero. Cæsarean section seemed to be an ideal method to get out of the difficulty in cases of severe toxæmia, but most experienced obstetricians agreed that the greater the surgical interference the greater were the risks, and the higher was the maternal death-rate. She very rarely employed it for toxæmia. Dame Louise urged that in cases of toxæmia it was essential to follow the patient up, and when another pregnancy was undesirable, advice should be given as to contraceptive methods. Dr. Leonard Colebrook's contribution to THE LANCET on Sept. 30th, 1933 (p. 735), on the treatment of infective conditions of the urinary tract in the puerperium had opened an interesting new line. It would be instructive to know the results of giving a ketogenic diet to antenatal patients; but perhaps this would have a disturbing effect on the fœtus.

Myomata in pregnancy.—It was the usual custom to leave these growths alone during pregnancy, and if they complicated labour to deal with them at term. She had had encouraging results from the conservative methods employed for toxæmia.

In conclusion, the speaker deplored the loose statements sometimes made as to failure of antenatal care. Carried out by qualified practitioners, this care would certainly, in time, reduce the maternal death-rate to its possible minimum. In many cases toxæmia, though its onset could not be prevented, could be prevented from having a fatal ending. Antepartum hæmorrhage was being reduced. In five years, of 126 cases of antepartum hæmorrhage admitted to hospital, only 17 were due to toxæmia, the remainder being due to placenta prævia. She submitted that the present classification of the toxæmias of pregnancy should be revised.

HIGH BLOOD PRESSURE AND OLIGURIA

Dr. A. A. OSMAN practically confined his remarks to two clinical features—high blood pressure and oliguria, the former especially in relation to the later results of pregnancy toxæmia. He divided the high blood pressure cases into those in which it was associated with primary disease of the kidneys other than primary arterio-sclerotic disease, and those showing no evidence of past or present primary kidney disease. The outcome of several investigations showed that the question of the causal association of childbearing with chronic nephritis was still sub judice. It was interesting to attack the subject from another angle, i.e., instead of selecting cases of pregnancy toxæmia and studying their fate, to take cases of chronic nephritis in women of childbearing age and determine, from their past history, the probable cause of their chronic nephritis. Such an inquiry on his part suggested a close relation between pregnancy and nephritis; and it was while collecting figures for this purpose that he became convinced that a considerable number of the cases referred to him as those of chronic nephritis following pregnancy toxæmia were probably not suffering from that disease, but, rather, from chronic or essential hypertension, and that the kidneys were either not primarily affected or had recovered. or were only involved seconda[illegible] Certainly a number of people of both sexes were a[illegible] present day subjects of unusually high blood pres[illegible] though many of them were fortunately not co[illegible] of it and did not therefore seek. nor need, ad[illegible] Many, however, died prematurely from heart failure, apoplexy, or renal failure. There must be many cases of minor renal involvement, as shown by slight albuminuria, who yet would be liable to succumb to myocardial insufficiency or cerebral hæmorrhage. There was, however, no disturbance of nitrogen metabolism in such cases. The malignant hypertension of Fahr, characterised by necrosis and endarteritis of the arterioles, occurred in probably not more than 2 per cent. of cases of hypertension, but it might prove to be an important syndrome in connexion with pregnancy toxæmia. The actual causes of essential hypertension were unknown, but heredity and a tendency to obesity were predisposing factors. Of 42 parous women sent up as suffering from "chronic nephritis," 24 had chronic nephritis and 18 had essential hypertension, i.e., a persistently raised blood pressure and little else. In some there was a little albumin in the urine, but no increase in the blood-urea, nor any decrease in the concentrating power of the kidneys. Of the 24 chronic nephritics, 10 were attributed to pregnancy, and 7 of these had had pregnancy toxæmia, whilst in 3 this factor was unknown. Of 18 cases of chronic hypertension the probable cause was pregnancy in 16. These results, with so few figures to support them, did no more than suggest that pregnancy and the pregnancy toxæmias might prove to be important causal agents in the ætiology of chronic essential hypertension or activating factors in those predisposed.

With regard to oliguria, he had seen six cases of late pregnancy complicated by albuminuria and considerable anasarca in whom the output of urine was so low as to constitute a menace to life. The œdema was thought to be due to an abnormal affinity of the body tissues for water and to alterations in the osmotic pressure relations between blood and tissues, and not to a primary inability on the part of the kidneys to excrete water, for in such cases insufficient water was presented to the kidneys to be dealt with. Retention of products in the blood did not occur because the concentrating power of the kidney was not yet greatly affected. In chronic nephritis complicated by pregnancy the condition might be otherwise. In both cases, if oliguria was sufficiently prolonged and severe, a time might come when the volume of urine passed was sufficient to carry away the extractives, and retention products would accumulate in the blood, though the resulting uræmia was temporary. If not dealt with, however, it might well imperil life. The trouble was very liable to commence with the onset of labour and the physical exertion accompanying it. The lesson was to procure an adequate output of urine in relation to the concentrating power of the kidneys in the later stages of pregnancy and throughout labour, and for two or three days afterwards. Failure to do this was the cause, he was certain, of some of the deaths after labour in patients in whom, before labour, the symptoms were not severe enough to cause anxiety. For treating this oliguria he regarded alkalis given by the mouth as the most effective; indeed in all cases of pregnancy complicated by oliguria, these were the least harmful and the most certain of the diuretics. Their administration should be continued until a few days after labour. Some cases were doomed because in spite of an adequate o[illegible] [illegible] from the kidneys under the [illegible]ence of [illegible] such fluid was almost pure [illegible], the ki[illegible] unable to concentrate at all.

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He had also investigated the mortality following upon Cæsarean section as a remedy. There were 36 Cæsarean sections, 8 of which ended fatally—i.e., 17·4 per cent. In none of the institutions he referred to had Cæsarean section been done for eclampsia in seven years. 33 per cent. of the fatal cases of eclampsia followed difficult delivery or manual dilatation. Hence much manual interference was a disadvantage. In 8 of the 15 fatal cases ascribed to acute toxæmia without convulsions there was a history of prolonged administration of chloroform, and in most of them, of difficult delivery; it was therefore reasonable to stress again the danger of that anæsthetic in these cases. When chloroform was used in them, its quantity should be restricted to the least possible.

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In these cases laboratory investigation should be auxiliary to clinical watchfulness; and he had been impressed with the good results which followed a purely medical line when this line was followed reasonably soon by definite improvement in the clinical condition. It was a pity to adopt an arbitrary time-limit during which such medical treatment should be continued. He would persevere with a patient in whom the blood pressure remained steady under 170 mm. systolic, if the urine output remained good and the skin acted well, even though the albumin in it did not diminish nor the œdema disappear.

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Discussion

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Dr. G. W. THEOBALD, who said he had seen cases of pregnancy in all parts of the world, claimed that the toxæmia under discussion was a disease of environment, especially of internal environment. He did not think there was such a specific condition as the toxæmia of pregnancy. Most unmarried women had never had their urine tested. In the treatment of the toxæmia which had been described he stressed the importance of iodine, calcium, vitamins, and iron.

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The CHAIRMAN stressed the importance of taking a good deal of care to obtain a complete medical history in this work. He had had cases in which previous renal trouble was revealed and yet it had escaped the purview of resident medical officers premature labour in these were: (1) if the mother's life was spared but the toxæmia was prolonged, the ultimate damage to liver and kidneys was serious. Prolonged toxæmia had a marked effect in the way of kidney damage. (2) Labour might have to be induced because otherwise the fœtus might die in utero. Cæsarean section seemed to be an ideal method to get out of the difficulty in cases of severe toxæmia, but most experienced obstetricians agreed that the greater the surgical interference the greater were the risks, and the higher was the maternal death-rate. She very rarely employed it for toxæmia. Dame Louise urged that in cases of toxæmia it was essential to follow the patient up, and when another pregnancy was undesirable, advice should be given as to contraceptive methods. Dr. Leonard Colebrook's contribution to THE LANCET on Sept. 30th, 1933 (p. 735), on the treatment of infective conditions of the urinary tract in the puerperium had opened an interesting new line. It would be instructive to know the results of giving a ketogenic diet to antenatal patients; but perhaps this would have a disturbing effect on the fœtus.

Myomata in pregnancy.—It was the usual custom to leave these growths alone during pregnancy, and if they complicated labour to deal with them at term. She had had encouraging results from the conservative methods employed for toxæmia.

In conclusion, the speaker deplored the loose statements sometimes made as to failure of antenatal care. Carried out by qualified practitioners, this care would certainly, in time, reduce the maternal death-rate to its possible minimum. In many cases toxæmia, though its onset could not be prevented, could be prevented from having a fatal ending. Antepartum hæmorrhage was being reduced. In five years, of 126 cases of antepartum hæmorrhage admitted to hospital, only 17 were due to toxæmia, the remainder being due to placenta prævia. She submitted that the present classification of the toxæmias of pregnancy should be revised.

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A REVIEW OF TWO THOUSAND CASES

Mr. BRIGHT BANISTER based his contribution on a consideration of 2213 cases which occurred in the years 1908 to 1932, over the wide area covered by London, Sheffield, Manchester, Edinburgh, Glasgow, and Liverpool, as well as cases in his own practice. A tendency to undue pessimism could be modified by a realisation that most of the cases occurred in large maternity hospitals, which in themselves concentrated the tragedies occurring in a large area of practice. There were, in this large series, 1502 cases of albuminuria occurring in pregnancy and associated with toxæmic symptoms; 115 cases of acute and subacute nephritis with profound toxæmia not associated with convulsions, and 596 instances of toxæmia associated with convulsions to which the title eclampsia was applied. There were 125 fatal cases in the later months of pregnancy, or a rate of 5·6 per cent. The 92 fatal cases of eclampsia gave a mortality for that condition of 15·4 per cent. It was interesting to compare this last figure with what was found in more recent years. In the first 12 years there were 206 cases of eclampsia, with 36 deaths, i.e., 17·4 per cent.; in the second equal period there were 390 cases, with 56 deaths, or 14·3 per cent. Was this improvement likely to be progressive with the years?

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The CHAIRMAN stressed the importance of taking a good deal of care to obtain a complete medical history in this work. He had had cases in which previous renal trouble was revealed and yet it had escaped the purview of resident medical officers and students. In one or two cases recently questioning failed to disclose previous scarlet fever, diphtheria, or other disease, but on inquiry from the family doctor such a history was at once forthcoming. The frequency of such an earlier history had an important bearing on the incidence of chronic nephritis in eclampsia.

Mr. V. B. GREEN-ARMYTAGE hoped it would not go out into the world that a member of the section had declared that there was no such specific condition as the toxæmia of pregnancy. In the East, at least 15 per cent. of all primiparæ suffered from some form of toxæmia. His views on this matter were those of Dr. James Young.

Reply

Dame LOUISE MCILROY, in reply, agreed with the remarks as to the danger of chloroform administration in these cases, especially for prolonged procedures. Again she stressed the importance of counteracting the anxiety of primiparæ. In gleaning histories, diphtheria was of the first importance, as it probably left some permanent kidney damage.

Dr. OSMAN said that family histories showed that in some kidney disease was a family complaint. Such anæsthetics as chloroform should not be administered if it could be avoided. Nephritis was common among unmarried women, but less common than among the married who had borne children.

SECTION OF RADIOLOGY

AT a meeting of this section held on Nov. 17th, the chair was taken by Dr. R. S. PATERSON, the president, when a discussion on the importance of

Posture in Radio-Diagnosis

was opened by Dr. E. W. TWINING, who selected the skull to illustrate his remarks.

THE SKULL

Excluding pituitary growths, he said, the meningiomas were the most likely tumours to show direct evidence of their presence. They caused erosion, hyperostosis, and hyperæmia of the overlying bone, and the diploic veins could be seen enlarged, with parallel sides. Stereoscopic films were invaluable for showing these veins and examining the small areas of bony change. Olfactory groove tumours were difficult to diagnose radiologically, and positions might have to be designed to show them. Absence of the clinoid process and the depression of the roof of the sphenoidal sinus might indicate a large growth. Rarefaction might also be seen, but might be misleading in localisation. The petrous bone was well shown by Stenvers's position, but this view superimposed the anterior and posterior surfaces. Projection of the petrous bones into the orbit allowed comparison of their density but did not show the back. Petrous bones varied very much; the internal auditory meatus could be found by tilting the head until the meatus appeared as a bright white dot through the external meatus. The superimposition method, however, was greatly surpassed by fronto-occipital projection at an angle of 30°, which grazed the back of the petrous. This method was also useful for occipital fractures and small areas of calcification. It was known in America as Towne's method.

Posture was all-important in ventriculography, e.g., in hydrocephalus. The third ventricle pressed on the posterior clinoid processes and pituitary fossa. The lesion could not always be distinguished from sella destruction due to pituitary adenoma. The site of obstruction was important from the point of view of treatment. Patency of the foramen of Monro could be shown radiologically without difficulty. A dilated third ventricle might be seen in the antero-posterior view or even better in vertical projection; lateral view might show the whole area clearly, but to make sure of filling the ventricle the patient should be placed as for a vertical view, though a lateral view was actually taken. If one film were taken with the head rotated towards the plate and another with the head rotated away—the shadow-shift method—the two ventricles could be distinguished. Intracranial aneurysm of the internal carotid artery might be shown by thorotrast injection of the artery.

THE CHEST

Dr. J. V. SPARKS discussed the chest, where, he said, posture was of primary importance in routine examinations because from these views the radiologist decided whether further investigation would be useful or not. Various routines were adopted by different observers. He himself employed the prone posture tilted at about 10° towards the apices, the forehead supported on a sandbag and the shoulders pressed well downwards and forwards with the elbows flexed. The first variation was the erect position, the patient sitting and clasping the cassette tilted a little towards his apices. From these two views the radiologist could decide whether to take oblique, lateral, or other views. If the patient was very ill, fluid could often be shown by turning him on to his side and taking a picture with the rays parallel with the floor. Secondarily, the patient could be rotated as required to show special areas for localisation.

The presence of fluid in association with air naturally illustrated best the importance of posture; the patient could be tilted to any angle, or inverted. Basal abnormalities were likely to be overlooked if the patient were not examined by Rowden's method, which brought into view the lung behind and in front of the dome of the diaphragm.

THE ABDOMEN

Dr. G. B. BUSH dealt with the abdomen. Two factors, he said, rendered posture of vital importance in abdominal investigations: (1) the change of position and shape with change of posture in man and in the course of man's evolution to the upright position; and (2) the fact that opaque fluids had to be used for examination, and these fluids changed with posture. A simple motor-driven tilting couch was a valuable piece of equipment. Stricture of the œsophagus was better shown in a lateral recumbent view. The cardio-œsophageal junction was difficult to study satisfactorily without changes of posture. Filling defects might not be noticed in the upright position, and supine or sloping positions were of great value for atonic stomachs. The inclined position was also most useful for the duodenal bulb. In small intestine obstruction fluid levels were of great diagnostic importance. Posture was important in determining mobility in diverticulitis and fixation. Visceroptosis was not in itself a cause of symptoms but rather one link in a chain of cause and effect. Gall-stones might be more clearly demonstrated in the upright than in the horizontal position; stones tended to fall to the bottom of the gall-bladder. Minute calculi and bile sand might be shown in this way.

DISCUSSION

Dr. GRAHAM HODGSON showed slides illustrating the value of posture in facial fractures and in erosion of the optic foramen by intracranial growth.

Dr. G. E. VILVANDRÉ said that great reliance could not be placed on diploic veins; their enlargement did not necessarily mean cerebral tumour. Meningeal plaques were not uncommon and did not indicate meningioma; it was uncommon to get direct evidence of meningioma. The value of radioscopy lay rather in the indirect evidence of mottling, opening of sutures, or distortion of the pituitary fossa. Too much stress had been laid, he thought, on the direct evidence in cranial tumours.

Dr. C. G. Teall said that radiology had made enormous strides in cranial work. Meningeal veins could be enlarged without indicating meningioma, but not in the way shown by Dr. Twining. A reversed Towne position had proved valuable: the patient lay on the forehead and the tube was tilted upwards from the feet. This position was also useful for showing the pituitary fossa. Stereoscopy was open to many fallacies when used for ordinary localisations. Ventriculography represented a great advance. Further research in the radiography of the skull was of great importance.

Dr. Courtney Gage observed that when there seemed to be a defect in the outer or inner table it was useful to take any of the methods suitable for a duodenal cap and to displace the film slightly before each exposure. Expiration was valuable in studying the cardiac end of the stomach; the meal went up into it in expiration in the dorsal supine position. Another useful method was examination by the opaque enema in the erect position.

Dr. Leo Rowden recalled that years ago he had been much laughed at for saying that the preliminary examination of the stomach always took him an hour and a quarter, but he thought now that the laugh was on his side.

Dr. Vilvandré pointed out the value of the pineal, displacements of which could be seen in patients over 40 on account of its calcification.

In reply, Dr. Twining agreed that diploic veins might be enlarged in other conditions besides meningioma, but said he had been describing a particular type. A false localising sign might be due to vascular pitting far away from the tumour. Calcified plaques were often found, but the "normal" ones were usually bilateral. If an enostosis in the skull was found it should be investigated, even if it proved in the end not to be associated with meningioma.

THE ANNUAL DINNER OF THE ROYAL SOCIETY OF MEDICINE

The annual dinner of this society was held on Nov. 16th, the chair being taken by the president, Mr. V. Warren Low. After the loyal toasts had been honoured, the Earl of Athlone, proposing

THE HEALTH OF THE ROYAL SOCIETY OF MEDICINE

said he was glad to find that many of the Fellows were graduates of the university of which he was chancellor. The society owed its inception to individual initiative, and its originators had settled their plan at a meeting in a tavern. From a tavern to a charter had taken less than thirty years, and that period had also seen a migration from Gray's Inn to Lincoln's Inn-fields. After two further changes of habitat the society found itself firmly settled in the west in its own home. Its apparent restlessness had been due to growth and ever-increasing activity. The medical library, second to none, attracted, on an average, a hundred readers a day. An endowment of the library would be of the greatest assistance. He heard, with some compassion, that an enlargement of premises would soon be necessary, but he did not doubt that the needed funds would be forthcoming. He hoped that individual initiative would continue to exercise the power it had exercised in the past, as only by individual initiative was anything done.

The President, in reply, said that fortunately Lord Athlone was a soldier, for it required some courage nowadays to accept an invitation to a banquet. The modern guest, once seated, produced his calorie chart and vitamin table and hastily calculated how many hours of squash racquets and how many baths would be required to counteract the menu. It must be very disappointing to many to learn that brain work made no demands on the energy requirements of the body. Biochemists might not regard after-dinner speaking as brain work, but the accompanying emotional perturbation might receive some biochemical recognition.

The medical profession was always ready to adapt itself to the whims of the public. A short while ago the public had announced that it would be thin; immediately the medical correspondents of the lay press had leapt to the demand and produced a flood of diet forms and dietetic information. Similarly a short time ago the public had demanded to be wrenched back to health, and forthwith there had arisen a body of athletic medical men willing to twist any ailment. To put the osteopath on a level with the doctor would be unfair to both; the former would lose a grievance which gave him much satisfaction and the latter would lose the singularity which was perhaps his chief charm.

There were now 5000 Fellows and Members of the society, an increase of nearly 200 over last year; and 24 sections. The library was perhaps the chief attainment; it was the largest medical library in the world, containing 170,000 volumes and taking a thousand periodicals from all over the world. It was open five nights a week until 10 o'clock, and was only closed on public holidays. In conjunction with such bodies as the post-graduate schools the society would find increased scope for usefulness. Its motto meant that for such a society mere existence was not enough; it must live a vigorous life.

Prof. William Bulloch, in proposing the health of

THE GUESTS

said that Lord Athlone had long been associated with medicine, and so had many of his ancestors. Prof. Bulloch regretted, as hon. librarian of the society, that he had not had time to read all the works Sir Ernest Benn had published—or indeed any of them. He agreed that individualism was the great thing in this world. Most of the other guests, he added, were presidents of kindred societies. Unfortunately the president of the Royal College of Physicians was not present as, after attending everybody in the country, he was himself ill with a slight cold.

Sir Ernest Benn, in reply, said that to him a librarian was a creature engaged in the nefarious business of encouraging people to read books without paying for them. The institution represented by Lord Athlone and Lord Macmillan had decided in the year 1889 that he was not fit to matriculate, and thus had launched him on a career without a suspicion or taint of education about him—for which he had been grateful ever since. Scientific people—whether in the interests of economy or not, it was not for him to say—did not advertise but were the greatest living experts in extolling each other's qualities; no layman could hope to compete. His self-imposed mission was to attempt to save humankind from a superabundance of good works. He noted with pleasure that at its inception the society had killed 17 other societies; he would be glad to send a list of 1700 more societies which had since that date become ripe for dissolution.

Commercial people were subjected to a continual process of spiritual purification owing to the need to speak humbly to their customers and to tell the truth about their goods; they were on the high moral plane of payment by results. It was a constant amazement to him that medical men were able to maintain a modicum of spiritual health under the different conditions in which they worked. The cultivation of the mind was at least as important to man's well-being as the care of some of those less respectable organs which were the charge of the doctor. The world was in a mess from chasing the notion that it could make a living by politics, that rewards could be won by votes instead of work, and that authority could be separated from responsibility. Governments were telling millions of people: "You have the baby; we do the rest." How much sound, good, God-made science was prostituted by that degrading idea! What was the doctor's share in this degradation? He would not go so far as to say that we needed "fewer clinics, more cynics." In the words of a socialist mayor, however, it was "very 'ard to steer a course along the narrer path between right and wrong." A committee might usefully inquire whether character, wit, and spirit could exist in a world from which all trouble was removed at other people's expense

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Dr. Lapage finds a dispositional tendency to groupings of endocrine glands in parent and offspring which may have an effect on illnesses and thus lead to similarities in parent and offspring. Traumatic influences are important in the causation of nervous conditions; not direct trauma but the cumulative effect of stress and strain of modern life on the senses, the *autonomic nervous system, and on metabolism.* These effects are severe, especially in predisposed individuals. Conflicts in the cerebral cortex between excitation and inhibition and disturbances of radiation may lead to functional disorder. Traumatic factors *may also by their effect on the autonomic nervous* system lead to allergic conditions; children are liable to such allergic habits, and the more often the habit is repeated the more difficult it becomes to break. Overloaded metabolism acts as a traumatic agent, and can be a very potent factor in determining nervous diseases.

Infection, unlike allergy, is not primarily dispositional but fortuitous. It attacks any individual, and though it may produce different reactions in different constitutions in the main its effects are the same. It is difficult to prove any decided correlation between parasitic diseases and physical configuration, but certain infections seem to attack certain physical types with greater frequency. For instance, tuberculosis often infects the asthenic type. *Attritional* influences are chiefly those of wear and tear and age. Just as growth and development are much influenced by the endocrine glands, so attritional effects are due to disorders or dysfunction of those glands.

The attack on disease should not be limited to public health measures to prevent infection, but should include efforts to relieve stress and strain, and thus lessen traumatic influences. Full attention is already being given to infection; the same attention should be given to the relief of the cumulative traumatic influences which are being steadily thrown on the nervous system.

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A comparison of these two publications indicates a general agreement on the main obstetric factors in the causation of maternal mortality. They concur in stressing the need for a reduction in the amount of interference in labour and on the importance of the effort to maintain normal function. An increasing resort to artificial delivery, even in hospital practice, seems to be more marked in America than in this country, the average rate of forceps deliveries in 121,000 cases being 17·4 per cent. in 207 general hospitals with maternity departments and 20·4 per cent. in 25,000 deliveries in 16 maternity hospitals. The reasons given for interference are much the same as those put forward by Prof. Munro Kerr—viz., the demands of the women for anæsthesia and a short labour—but another explanation which is not represented in the British book, both for the use of forceps and for the ever-increasing proportion of Cæsarean sections, is an exaggerated idea of the value of the infant's life and of the value of operative delivery in conserving this life. The second half of this statement gives the clue to the argument, which is that fœtal distress is often made the indication for these operations but that the evidence of the heart sounds is unreliable and that the results obtained from interference are insufficient to justify it. The conclusion reached by the American observers is that "What is needed is a return to the idea that parturition is essentially a physiologic phenomenon, which should be interfered with only for good reason." Prof. Munro Kerr brings forward evidence casting grave doubt on the conclusion of the Departmental Committee that the mortality-rate was not materially affected by the widespread resort to provoked abortion, and his view receives strong confirmation from the American report.

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In the section on injection of the Gasserian ganglion the legend to Fig. 34 appears to be wrong; the thumb

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[1] See THE LANCET, 1931, ii., 367.

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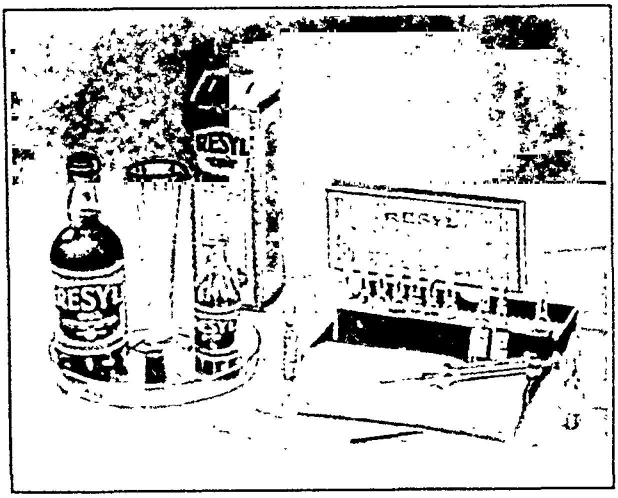

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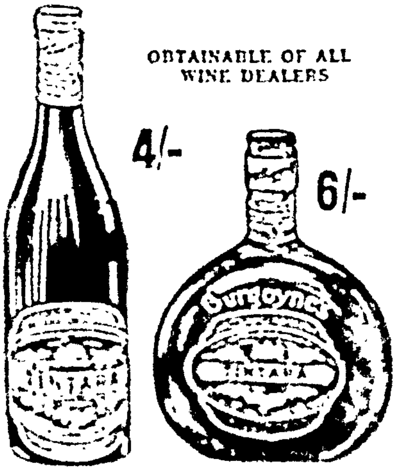

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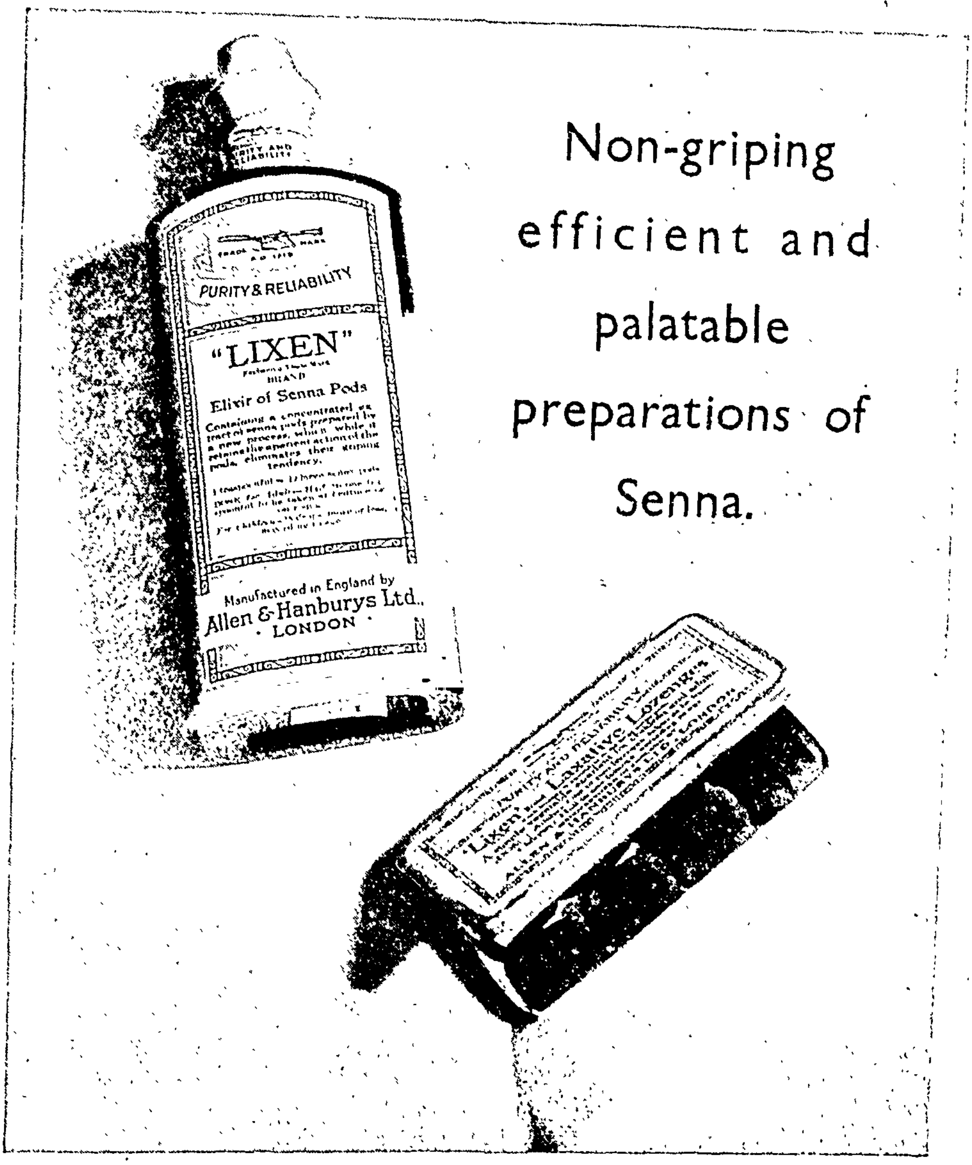

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See also pp. 12 and 20

THE LANCET

LONDON: SATURDAY, NOVEMBER 25, 1933

THE COST OF AN ADEQUATE DIET

THE British Medical Association renders an appropriate and timely service by publishing this week the report of its committee on nutrition. The Committee[1] was appointed last April "to determine the minimum weekly expenditure on foodstuffs which must be incurred by families of varying size if health and working capacity are to be maintained." For some seven months therefore its members have been considering, indirectly, one of the most important aspects of the problem of unemployment relief, and their report is as lucid and illuminating as can be expected in the present state of knowledge.

It has not been possible within this time to reconsider the fundamental principles on which nutritional needs are generally estimated, and it is open to bold critics to say that these principles are unsound. If the classical physiological observations stand, however, the rest of the Committee's findings must be accepted in substance. They are based on an assumption that the adult male requires on the average 3400 calories a day to keep body and soul in good working order; and this, it is true, exceeds most previous estimates by 400. On the other hand the report offers good reasons for the increase, and in practice the extra amount is made up from cheap carbohydrates which add little to the cost of the diet. In calculating the proportionate requirements of women and children the Committee adopts the scale laid down by E. P. CATHCART and A. M. T. MURRAY[2] which enables one to express a family's needs in "man-values"; for example, a husband, wife, and four children have the same calorie needs as 4·63 adult men. Calories, however, are not enough, even when seasoned with vitamins and minerals, and the Committee draws its conclusions from specimen diets which could in fact be tolerated by the consumers and have the necessary flavour of variety. Again, for children it rightly insists on a disproportionate supply of first-class protein and bases its estimates on an item of one pint of milk per day for every child from one to six years of age.

The specimen diets have been prepared as economically as possible, and the approximate cost of each is given. Prices, however, vary from time to time and place to place, and the Committee names no one sum that may be supposed to cover the weekly needs of the adult male. Instead it offers two scales of cost—one based on the prices ruling in a single locality (Stockton-on-Tees) during twelve months, and one (the B.M.A. scale) based on the prices current in a number of areas throughout the country during two weeks of last summer. The Stockton scale is the lower because Stockton—hard hit by the depression—is a very cheap market; but the difference is more apparent than real, since it is mainly accounted for by the purchase of flour instead of bakers' bread. In Northern towns the bread is made at home and the cost is thereby reduced; it should be noted, however, that the Stockton figures make no allowance for fuel. The accompanying Table of Family Coefficients, which really contains the main conclusions of the report, gives both scales, and it will be seen that the Committee holds that the lowest expenditure which will support both health and working capacity in the adult male is 5s. a week in Stockton and 5s. 11d. in the other areas studied. This is in line with previous estimates,[3] but the Table brings out even more emphatically the large needs of children. It has proved impossible even at Stockton prices to devise an adequate diet for a child at less than 2s. 6d. a week and the cost rises rapidly with age until the boy of fourteen reaches the adult level.

	Man-value calorie Coefficients.	Cost per head per week (to nearest 1d.)			
		B.M.A. scale.		Stockton scale.	
		s.	d.	s.	d.
Adult male	1·00	5	11	5	0
Boy over 14 years	1·00	5	11	5	0
Adult female	0·83	4	11	4	2
Girl over 14 years	0·83	4	11	4	2
Child 12 and under 14 years	0·90	5	4	4	6
" 10 " 12	0·80	4	9	4	0
" 8 " 10	0·70	4	2	3	7
" 6 " 8	0·60	3	7	3	0
" 3 " 6	0·50	3	5	3	0
" 2 " 3	0·40	3	1	2	10
" 1 " 2	0·30	2	8	2	6

SUPRACONDYLAR FRACTURE OF THE HUMERUS

A MEDICAL student asked to name the complications of the common supracondylar fracture of the lower end of the humerus in children would be expected to know that Volkmann's ischæmic paralysis may be caused by interference with the vascular supply during the early stages of treatment and that early resort to passive movement and massage is liable to lead to myositis ossificans. These sequelæ are alarming enough to deserve all the attention they have received, but there are other imperfections in the end result [illegible]

[illegible]

Dr. Wäinö Avellan,[1] of Helsinki, has lately analysed the records of 41 fractures of the lower end of the humerus in children, including 31 supracondylar fractures—all of them under his own care. Although they include examples of very severe injuries, none was followed by what would usually be called a really bad functional or anatomical result. Avellan, however, is dissatisfied first because of the high proportion of cases (16 out of 31) resulting in varus deformity, and secondly because there was a very definite limitation of flexion in 90 per cent. What has most impressed him in his experience is the importance of treating supracondylar fractures of the humerus with the forearm in *pronation.* Nearly all his cases were treated, after reduction, in a plaster splint, with the elbow at an angle of 90° and with the forearm in complete supination. Anyone who likes to experiment in the dissecting-room on the effect of different degrees of pronation and supination on the tension of the pronator teres can prove to his own satisfaction that the effect of full supination, with a fracture of the lower end of the humerus, will be to angulate the fracture outwards through the pull of the lower attachment of the pronator teres to the radius. Avellan quite definitely attributes his bad results to his failure to recognise the importance of the position of pronation, as originally emphasised in the writings of Lorenz Böhler.[2] Unfortunately the varus deformity cannot be recognised, either clinically or by radiography, until the elbow is extended—a position in which it is unlikely to be examined for several weeks after reduction. The final radiogram, taken after the fracture is firmly united, will show the loss of the carrying-angle if this is looked for, but reveals no very obvious deformity of the humerus; the callus thrown out masks the slight bend which is all that might be seen.

The second criticism of his own methods which Avellan makes is that the degree of flexion during reduction and treatment was insufficient. English surgeons, notably Sir Robert Jones, have advocated a position of acute flexion for this fracture, partly because of its success in retaining the bone-ends in the corrected position, and partly because the pressure of the soft parts on the front of the humerus leaves little room for the development of excessive callus. As Robert Jones put it, "No obstructive callus can form, because there is no room for it."[3] In view of the supposed danger of producing ischæmic paralysis there has been a tendency of late towards abandonment of this position of acute flexion for one of right-angled flexion, and it is therefore well to emphasise the fact that the position advocated by Robert Jones was not one of *forced* flexion. His instructions are that the elbow should be flexed "until the hand touches the neck"—not, be it noted, the shoulder. He specifically stated that the forearm should not be bandaged to the arm, or the arm to the body. In practice it will be found impossible to maintain a position either of forced flexion or of forced supination by simply slinging the wrist to the neck, but the collar-and-cuff method actually gives nearly full flexion and semi-pronation, with the extensor expansion of triceps acting as a posterior splint, and it therefore seems to meet all the requirements. A broad arm-sling loosely folding the arm and forearm to the body can be used to relieve undue strain on the hand and wrist. Robert Jones pointed out that by treatment of the limb in flexion the action of the forearm as a deforming lever is prevented. The large hæmatoma produced by the severe trauma in these cases often means a potentially large mass of callus, especially as the periosteum is often widely stripped up, and no longer restrains callus-formation. Early massage and movement may lead to the complete ossification of this callus. Avellan found that the factor most potent in promoting excessive callus-formation was late reduction of the fracture with consequent disturbance of the already organising callus. But he also found that excess of callus was later absorbed. The interference with flexion seen in the records of his end-results he puts down to a failure to reproduce perfectly the forward tilt of the lower humeral epiphysis with the shaft, and the cause of this, he thinks, was treatment with the elbow imperfectly flexed.

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Dr. WÄINÖ AVELLAN,[1] of Helsinki, has lately analysed the records of 41 fractures of the lower end of the humerus in children, including 31 supracondylar fractures—all of them under his own care. Although they include examples of very severe injuries, none was followed by what would usually be called a really bad functional or anatomical result. AVELLAN, however, is dissatisfied first because of the high proportion of cases (16 out of 31) resulting in varus deformity, and secondly because there was a very definite limitation of flexion in 90 per cent. What has most impressed him in his experience is the importance of treating supracondylar fractures of the humerus with the forearm in *pronation*. Nearly all his cases were treated, after reduction, in a plaster splint, with the elbow at an angle of 90° and with the forearm in complete supination. Anyone who likes to experiment in the dissecting-room on the effect of different degrees of pronation and supination on the tension of the pronator teres can prove to his own satisfaction that the effect of full supination, with a fracture of the lower end of the humerus, will be to angulate the fracture outwards through the pull of the lower attachment of the pronator teres to the radius. AVELLAN quite definitely attributes his bad results to his failure to recognise the importance of the position of pronation, as originally emphasised in the writings of LORENZ BÖHLER.[2] Unfortunately the varus deformity cannot be recognised, either clinically or by radiography, until the elbow is extended—a position in which it is unlikely to be examined for several weeks after reduction. The final radiogram, taken after the fracture is firmly united, will show the loss of the carrying-angle if this is looked for, but reveals no very obvious deformity of the humerus; the callus thrown out masks the slight bend which is all that might be seen.

The second criticism of his own methods which AVELLAN makes is that the degree of flexion during reduction and treatment was insufficient. English surgeons, notably Sir ROBERT JONES, have advocated a position of acute flexion for this fracture, partly because of its success in retaining the bone-ends in the corrected position, and partly because the pressure of the soft parts on the front of the humerus leaves little room for the development of excessive callus. As ROBERT JONES put it, "No obstructive callus can form, because there is no room for it."[3] In view of the supposed danger of producing ischæmic paralysis there has been a tendency of late towards abandonment of this position of acute flexion for one of right-angled flexion, and it is therefore well to emphasise the fact that the position advocated by ROBERT JONES was not one of *forced* flexion. His instructions are that the elbow should be flexed "until the hand touches the neck"—not, be it noted, the shoulder. He specifically stated that the forearm should not be bandaged to the arm, or the arm to the body. In practice it will be found impossible to maintain a position either of forced flexion or of forced supination by simply slinging the wrist to the neck, but the collar-and-cuff method actually gives nearly full flexion and semi-pronation, with the extensor expansion of triceps acting as a posterior splint, and it therefore seems to meet all the requirements. A broad arm-sling loosely folding the arm and forearm to the body can be used to relieve undue strain on the hand and wrist. ROBERT JONES pointed out that by treatment of the limb in flexion the action of the forearm as a deforming lever is prevented. The large hæmatoma produced by the severe trauma in these cases often means a potentially large mass of callus, especially as the periosteum is often widely stripped up, and no longer restrains callus-formation. Early massage and movement may lead to the complete ossification of this callus. AVELLAN found that the factor most potent in promoting excessive callus-formation was late reduction of the fracture with consequent disturbance of the already organising callus. But he also found that excess of callus was later absorbed. The interference with flexion seen in the records of his end-results he puts down to a failure to reproduce perfectly the forward tilt of the lower humeral epiphysis with the shaft, and the cause of this, he thinks, was treatment with the elbow imperfectly flexed.

AVELLAN considers at length why this fracture is so common in children. The reason, he believes, is the lateness of ossification at the lower end of the humerus, which means a longer retention of elasticity than there is for example in the epiphysis at the knee-joint. The elbow-joint yields to a backward strain by a slight backward movement of the bones as a whole. Then, as upward pressure of the forearm bones on the epiphysis of the humerus strains it to the limit of its elasticity, a fracture occurs at its junction with the shaft. As the process of ossification advances in the lower humeral epiphysis, the liability to typical supracondylar fracture correspondingly diminishes.

THE MIDDLE-CLASS PATIENT WHO CANNOT PAY

A FORTNIGHT ago we dealt in this column with the burden of medical fees as it falls on persons of small income already feeling the burden of illness. They are of the hospital class, that is to say, they have access when acutely ill to the public wards of a hospital or for consultation to its out-patient department. Moreover these contingencies can be met by membership of the Hospital Saving Association. Their difficulty is to pay their own doctor, and we pointed out how this difficulty might be solved by extension of a public medical service, such as the L.P.M.S., run by medical practitioners themselves. Subscribers to this service pay at present fourpence a week to enjoy the benefit of having a family doctor to attend them in case of illness and the necessary physic. No one with an income of more than £250 a year is eligible for this service, and it remains for us to consider the provision for illness in the group just exceeding

this income limit and yet not affluent enough to bear the many burdens of illness out of current account. It is not unreasonable to suppose that this group is in a position to pay for the services of a family doctor—every prudent householder does allow for this contingency in making up his yearly budget; but serious illness in a middle-class family brings such additional expenses as the visit of a consultant, the fee of a surgeon, or a period in a nursing-home or the paying wards of a hospital. It is in all these matters that the British Provident Association has stepped in to help its subscribers.

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[1] Über Frakturen des unteren Humerusendes bei Kindern, Acta Chir. Scand., 1933, vol. lxxiii., Suppl. xxvii.

[2] The Treatment of Fractures, Vienna, 1929.

[3] Brit. Med. Jour., 1932, i., 739.

The B.P.A. is not a money-making concern but a scheme for mutual aid which started in 1921 as the National Provident Scheme for Hospitals and Additional Medical Services and has now behind it 12 years of actuarial experience. In a brochure which is being widely circulated this week three actual cases are quoted in illustration of the benefits conferred. In each case the annual subscription was £2 16*s.*, and in the first case (No. 2193 on the books), being an excision of a portion of the pelvic colon, the combined charge of hospital and surgeon amounted to £123 18*s.* of which the B.P.A. contributed £115. In the second case, one of early appendicitis, the total bill of £69 6*s.* was nearly covered by the B.P.A. contribution of £61 8*s.* In the third case (No. 3862), one of hysterectomy, the total bill of £91 1*s.* was completely covered by the B.P.A. contribution. Each of these persons had secured this relief at the cost of 1*s.* 1*d.* a week. Any such scheme ought to be carefully scrutinised by those who propose to avail themselves of it, for it should be bona-fide insurance and not a lottery. The laboratory experiment of 12 years has proved the soundness of the B.P.A. scheme. It is essential for the possible number of subscribers to be sufficient to make it a success, and the B.P.A. does cover in its range the whole of the United Kingdom. It is not linked, even locally, with any particular hospital, nursing-home, or clinic, but leaves the choice free to practitioner and patient. Benefit is paid directly to the subscriber and interferes in no way with the professional relationship, either in the free choice of doctor or in the payment for services rendered. It may be that there are other schemes as good. There is one at least, namely, the Oxford University Provident Association, which includes general practitioner treatment. A report on the first year's working was given at Rhodes House, Oxford, on Nov. 12th by Sir FARQUHAR BUZZARD, who said that the membership was 1170 and that some £1600 had been payable in benefits during that period. The heaviest item, he said, in the schedule of claims related to services rendered by general practitioners; a welcome sign, he added, that members were encouraged to seek advice without undue delay, and so to prevent more serious complications which might lead to heavier claims in respect of nursing-home charges or surgical fees. It must be remembered however that the Oxford Provident Association deals with a constituency of young healthy unmarried males, for the most part with substantial financial resources behind them, and that its sickness experience is fundamentally different from that of a universal association such as the B.P.A. This association has in fact carefully considered whether to include general practitioner treatment among its benefits but decided not to do so, as it would mean doubling the present premium.

The B.P.A. has recently had a sum of money placed in its hands from the Pilgrim Trust for the sake of making its benefits more widely known. In a recent article in the daily press Dr. ALFRED COX has pointed out how excellent is the method of the B.P.A. for meeting the most urgent part of the problem of serious sickness, but it has, he said, received only scant encouragement. That is not the fault of its sponsors. At the public meeting held at the Mansion House in June of last year, the heads of the medical profession gave the scheme their unqualified blessing, and no one since has been able to gainsay it. We think the time has come for every practitioner seriously to consider whether it is not in the best interest of his middle-class patient and himself to advocate membership of the British Provident Association.

ASBESTOSIS

IN recent numbers of *Tubercle* Dr. S. ROODHOUSE GLOYNE has published a detailed account of the morbid anatomy and histology of asbestosis, based on the considerable number of cases which have come under his observation. His work will be welcomed by those who are interested in the subject of pneumoconiosis, for it will do much to overcome the opposition, stronger on the continent than in this country, of those who refuse to recognise this disease as an industrial hazard. Asbestos is a complex compound of silicon which is used pretty widely in industries, and both the miner who recovers it from the earth and the worker who manipulates it in factories are prone to suffer from pulmonary fibrosis, as the result of the inhalation of the fine particles of the mineral which escape into the air. In this country, of course, we are only concerned with the factory worker, to whom, there is plenty of evidence to show, it may be a very real danger.

The pathology of asbestosis appears to be essentially the same as that of silicosis, any difference in the distribution of the new-formed fibrous tissue being explicable by the larger size of the asbestos particle and its relative immobility in the lung. In asbestosis a nodular fibrosis is not so characteristic as in silicosis; a more diffuse fibrosis, particularly prominent in the lower lobes, is the rule. But occasionally, as in the figure published by Dr. GLOYNE, the asbestos lesions closely simulate those due to silica, and the coarse reticular fibrosis may be accompanied by characteristic whorls. It is perhaps not quite clear whether asbestos predisposes to pulmonary tuberculosis as regularly as silica, but persistent bronchitis and broncho-pneumonia are common terminal events in asbestosis; and the disease

has a high mortality-rate because of the cardiac failure which follows the extensive pulmonary fibrosis. Deaths from pure silicosis must be relatively rare in this country, but this is not true of asbestosis; for example, the drawing referred to above was made from the lung of a woman aged 26 who worked as a spinner for about five years till she left the industry at the age of 21. It is true that broncho-pneumonia was the immediate cause of death, but the fibrosis produced by five years' exposure to the dust, unaccompanied by tuberculosis, must have put a large part of the lung out of action and greatly disorganised the pulmonary circulation.

The peculiar value of Dr. GLOYNE's observations lies in the demonstration that extreme pulmonary fibrosis may result from the inhalation of a silicate. Until fairly recently it was generally held that only free crystalline silica was capable of producing the disease, and it is even now maintained by some that silicates are innocuous. Such an opinion can no longer be maintained about asbestos, and a recent paper in the *Journal of Hygiene* by Mr. W. R. JONES, D.Sc., suggests[1] that in actual fact silicosis itself may more commonly be due to a silicate than to silica. Dr. JONES, speaking as a geologist, lays it down that in the rocks exploited in industries silicon may exist, not only as the crystalline oxide, silica, but as the fibrous mineral sericite, a hydrous silicate of aluminium and potassium. In his examinations of silicotic lungs Dr. JONES has invariably found large quantities of the minute sericite fibres, and he draws attention to the fact that while sericite is present in all rocks which are recognised as causing silicosis, it is absent from the rock, otherwise rich in quartz, in certain Indian and Scottish mines where, it is said, silicosis does not occur. To those who are well acquainted with the problems of pneumoconiosis, the reputed absence of silicosis in any particular dusty industry in itself carries little weight. But Dr. JONES has put forward a strong case and further investigations on the lines he has indicated will be awaited with interest.

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[1] Silicotic Lungs: the Minerals they Contain. By William R. Jones, D.Sc., F.G.S. Journal of Hygiene, 1933, xxxiii., 307.

ANNOTATIONS

STIMULATORS OF METABOLISM

IN a leading article on Nov. 11th we referred to the powerful influence on basal metabolism exerted by certain benzene derivatives and to the dangers which might attend their application to clinical medicine. Further information has since become available. Tainter, Stockton, and Cutting[1] have now recorded observations based on the use of dinitrophenol in the treatment of 113 cases of obesity. Their experiences are not entirely reassuring. Colds or evidence of sinusitis were observed in ten patients, dyspnœa on exertion in four, gastro-intestinal upsets in three, alterations in appreciation of taste in six, cutaneous rashes in eight, cystitis in one, and a yellow pigmentation of the sclera in several. In nine cases the treatment had to be suspended, mostly on account of dermatitis. Since fatal pyrexia has followed the use of this drug in incautious doses, its advantages—which include, in addition to reduction of body fat, a lessening of hypertension when present and a relief of anginal symptoms in several instances—seem to be rather heavily outweighed. Moreover, since many of the unpleasant symptoms mentioned above cannot be attributed to overstimulation of metabolism, or, in other words, to simple overdosage, it is obvious initrophenol
is a poison in more ways than on ociates

The experiences of Prof. Dod more
with dinitro-o-cresol (see p. 11 the
encouraging. When judged by
basal metabolism, the latter dru
as potent, weight for weight,
Toxic symptoms have apparen
when the basal metabolic rate has ex
with the exception of the yellowis
of the sclera, the nature of these is c
the suggestion that they are simply
an abnormally high metabolic rate.
further experience confirms this con
symptoms will not contraindicate the u
drug, for thyroxine itself is a deadly pois
given in sufficient quantities. The pigmentation of the sclerotics, which is not, apparently, due to jaundice, cannot be lightly disregarded, however, especially as Tainter and his associates have observed the same phenomenon after the use of the more toxic dinitrophenol, and there is still room for research before dinitrocresol can be recommended as a general remedy for obesity. Perhaps the most interesting outcome of the observations of Dodds and Robertson is their discovery that although in myxœdema dinitrocresol raises the lowered basal metabolic rate to normal, it has no appreciable effect on the subcutaneous swellings from which the name myxœdema was originally derived. In this respect the effects of dinitrocresol are sharply contrasted with those of thyroxine, for the change in the facial appearance is the first and most startling effect of thyroid th this disorder.
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but i the fact t yroid gland is
some than a s metabolism.

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[1] Tainter, M. L., Stockton, A. B., and Cutting, W. C. Amer. Med. Assoc., Nov. 4th, 1933, p. 1472.

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(136 pregnancies) recorded elsewhere. He finds that even allowing for the likelihood of the mildest cases having previously remained undiagnosed, there seems to be a very considerable increase in fertility of diabetic women when under treatment with insulin. Rather surprisingly, the figures for fœtal mortality do not show a corresponding improvement, although Skipper concludes that the most important cause of fœtal death is poor control of the maternal disease, especially in the last months of pregnancy. Congenital abnormalities of the fœtus account for a relatively small number of deaths, and he found no evidence of congenital diabetes or fatal hypoglycæmia in the child after birth. The maternal diabetes became worse—as judged by the dosage of insulin necessary for its control—during the latter months of gestation in 13 out of 18 pregnancies, and the few recorded cases in which the presence of the fœtus within the maternal organism has been associated with improvement in the diabetic symptoms must be looked on as exceptional. On the other hand, an improvement in the diabetic condition after delivery was noted in 19 of the 33 hospital cases, being sometimes associated with hypoglycæmia. Skipper does not think that this hypoglycæmia can be attributed to lactation. The renal threshold in these diabetics was often found to be lowered, and less often raised, during pregnancy.

PITUITARY BASOPHILISM

It seemed at one time possible to generalise about the pituitary; to introduce it with a suitable verbal flourish as the master of the ductless gland series, the determiner of the metabolic gradient, &c.; to say that it stimulated growth and brought to structural and functional perfection the thyroid, parathyroid, suprarenal cortex, and the gonads; to declare that directly or indirectly it activates all the tissues of the body, and through the liver affects the combustion of fats and sugars. Some were indeed tempted to go still further and assert that the acidophil cells produced the growth hormones and suggest that the basophil cells were the source of the sex hormones.

This neat labelling received a shock with the announcement of Harvey Cushing's pituitary basophilism. This syndrome repeats itself with great constancy from case to case and is characterised by obesity of the trunk and face, lineæ distensæ, loss of sex function, osteoporosis, hypertension, and hirsutism in females. In these cases a basophilic adenoma of the pituitary is present. It is clear that a re-examination of current ideas of pituitary function must be undertaken. A discussion with such a purpose took place at the section of therapeutics and pharmacology of the Royal Society of Medicine on Nov. 14th, under the chairmanship of Prof. J. H. Burn; it was opened by Prof. H. H. Woollard and Dr. R. D. Lawrence, and Dr. Parkes Weber, Dr. P. M. F. Bishop, and Dr. F. G. Lescher were among the speakers. Two cases of pituitary basophilism which had been studied in great clinical detail were described respectively by Dr. Lawrence and Dr. Lescher. One of these cases, showing every feature that has been attributed to this syndrome, was interesting for two reasons. Spontaneous fractures and osteoporosis were associated with an increase of blood phosphatase to between two and three times the normal amount; irradiation directed to the pituitary fossa brought about a clinical cure even to re-establishment of menstruation which had been in abeyance for six years. The other case was also of interest because it reproduced the syndrome in every detail and a malignant tumour of the left suprarenal was discovered. The patient died twelve hours subsequent to the removal of this hypernephroma. The post-mortem examination gave an opportunity for making sections of the pituitary and a small collection of basophil cells was discovered, presumably a basophilic adenoma. The discussion revealed that the evidence for attributing the origin of the sex hormones to the basophilic cells is quite unsatisfactory. The evidence turns on the histological changes in the anterior lobe during pregnancy and after castration. There is little unanimity in the different descriptions and there is great variation from one species to another. The statement that the centre of the anterior lobe, where basophil cells are most numerous, is richer in gonadotropic hormones has never been supported by very convincing evidence. It is also clear that pituitary basophilism is not the expression of any excessive gonadic activity. Rather it is the reverse of an activating syndrome. Its principal features suggest a slowing down of metabolism, with high sugar tolerance, obesity, and sexual decay—a sort of physiological castration with a touch of virilism. The reproduction of the syndrome in dogs by the use of gonadotropic hormone from pregnancy urine was accomplished with reasonable similitude. This deepened the confusion, for the dogs remained stunted, became obese, and were sexually infantile—i.e., they exhibited no gonadokinesis.

Thus to the conception of a universally activating anterior lobe there must be added the theory that it is also producing substances which are inhibitory, depressive, and damaging to the organism. For the moment we must entertain the suspicion that the basophil elements are in some way the antagonists of the acidophil cells and that their over-activity makes for hypertensive, degenerative phenomena—the changes of senescence. The issue from the pituitary of a series of events hostile to the survival of the organism would indeed be a strange biological spectacle, making the origin and survival of the species even more mysterious than before. In the pituitary we seem to have found the spur of all activity and at the same time the seeds of destruction.

The discussion necessarily touched on the problem of virilism. The mild degree of virilism that attends a physiological castration, such as is manifest in the menopause or in pituitary basophilism, was felt to be very different in degree from the frank cases of sex reversal such as had been described by Dr. Gordon Holmes. Something additional to mere gonadic suppression was necessary to account for these. This additional something was held to be the abnormal proliferation of some mesonephric derivative such as is regularly present in the female. The cardinal point in the explanation of the sex reversal which is always female to male and never the reverse apparently lies in the bisexual nature of the ovary, ample embryological and experimental proof that the rete ovarii is a rudimentary testis was elaborated in the course of discussion.

JOHN TWEED

The genius of John Tweed, who died recently in London, can be recognised through the character of the public commissions which he received. The finishing of the Wellington monument in St. Paul's Cathedral, left uncompleted by Stevens, was entrusted to him, while important statues by him are to be found in our dependencies, for example Queen Victoria and Clive in India and Rhodes in South Africa. He executed also a statue of Captain Cook, which is placed at Whitby, and one of Sir John Moore at Shorncliffe. For the great figures in imperial development were the subjects which mainly attracted him.

But it is interesting to recall that one of his first, if not his first publicly exhibited work, was a bas-relief of John Hunter. Tweed was a Glasgow man and had here the assistance of Clelland, the famous anatomist who was also an artist, in the execution of the work. A plaster plaque of this bas-relief hangs in the Conservator's office at the Royal College of Surgeons of England, presented by Sir John Bland-Sutton, and its deposition at the College seems to have revealed the fact that Tweed had been to some extent influenced by a pencil portrait from the hand of Sir Nathaniel Dance-Holland in 1793. Dance-Holland was a portrait painter before marriage brought him money and the opportunities of public life. He enjoyed the patronage of George III. and was an original member of the Royal Academy. The sketch which also hangs in the Conservator's office at the College was presented by Capt. Sir Everard Home in 1843. Tweed also made a portrait bust of Dr. Jameson, while one of his last works was a portrait bust of Sir Arthur Keith, which is at the present moment on exhibition at Aberdeen.

THE CONSTITUTION OF DURHAM UNIVERSITY

The situation which began with the termination of Prof. R. J. Hutchens's engagement as lecturer on pathology at Newcastle College of Medicine, has developed into a widespread demand for a revision of the constitution of Durham University and its constituent colleges. On Nov. 1st, as we have already announced, the court of governors of the College of Medicine appointed a committee to consider the recommendations made by Sir Amherst Selby-Bigge as a result of his own inquiry, and after appointing eight members of the Court to form this committee (four of them being members of the college council) the Court resolved to invite the Chancellor to nominate to the committee three additional members connected with university practice elsewhere, one of whom should be designated by the Chancellor as its chairman. The City Council of Newcastle-on-Tyne has now decided that the constitution of the University is a matter in which the city has a direct interest: on the high ground that they are the custodians of education in the city, and on the more material ground that their support of Armstrong College amounts to a rate of 1 penny in the pound. At a meeting of the City Council on Nov. 15th it was resolved, by 55 votes to 1, to request the Chancellor to take such steps as he might deem desirable to secure an independent and impartial examination of the constitution of the University and its constituent colleges "with the object of securing such changes in the constitution of the University as will bring them into harmony with well-established university constitution and practice elsewhere." Sir George Hunter, who moved the resolution at the meeting of the City Council, disclaimed any concern with recent internal troubles, preferring to put his finger on what he considered to be a faulty principle. [illegible] in the College of Medicine, he said, [illegible] the court of governors the supreme governing body [illegible] another body, gives power to the council of [illegible] to refer back [illegible] College [illegible] For the [illegible] decision [illegible] the court [illegible] the [illegible] and the [illegible] had [illegible] [illegible] governors appointed to confer with Prof. Hutchens, he said: "We came to the conclusion that, in view of all the bitterness that had been generated and all the ill-feeling now existing, we could not expect Prof. Hutchens to go back with dignity, but we were so conscious of the fact that he had grounds for real complaint that we awarded him £5000, and that is sufficient evidence of what our views were." In the course of the discussion in the City Council the words were quoted of Prof. Rutherford Morison who, in pleading for reform, had said "future students passing from Newcastle will have a lowered standard because of the way the management is being conducted." The City Council expressed its feeling that action should be taken to bring the constitution of the University into harmony with practice elsewhere by accepting Sir George Hunter's motion with only one dissentient.

HOSPITALS AND MOTOR ACCIDENTS

What Lord Derby in the House of Lords recently described as "an intolerable burden" upon the voluntary hospitals is at last to be lightened. On the motion of Lord Luke (as noted in our Parliamentary Intelligence, p. 1181), the Peers, notwithstanding Government opposition, added to the Road and Rail Traffic Bill, which has now received the Royal Assent, a clause providing that hospitals shall be paid expenses reasonably incurred by them in the treatment of motor accident cases. The amount to be paid in respect of each in-patient is not to exceed £50, or, in the case of an out-patient £5. Under the Road Traffic Act of 1930 no more than £25 could be recovered, although the cost is often far greater. Lord Greville instanced a case which had cost St. George's Hospital £125. It has been estimated that the cost to the hospitals of treating accidents approaches a quarter of a million a year, of which only about one-eighth is recovered. In adding this clause to the measure the House of Lords simply followed its own precedent when it inserted a similar clause in Lord Danesfort's Road Traffic (Compensation for Accidents) Bill which was recently withdrawn because of the impossibility of getting it through Parliament in the short remainder of the last session. The Government opposition was based upon the supposed incongruity of such a provision in a measure for the better regulation of goods traffic and the possibility that the House of Commons might also think it not germane. But when the Bill went back to the Commons the new clause was quietly agreed to on the Government's own motion.

While this measure was passing through its later stages the Select Committee on the Road Traffic Compensation for Accidents Bill and Lord Moynihan's Road Traffic Emergency Treatment Bill issued a report dealing with the latter measure which [illegible] for [illegible] a maximum remuneration [illegible] guineas [illegible] and hospitals for treatment. [illegible] Think [illegible] that a maximum payment [illegible] and to [illegible] ordinary rate, the committee [illegible] to [illegible] standard rate of 12s. 6d. [illegible] a guinea [illegible] a small [illegible] for [illegible] amount of [illegible] will [illegible] travels [illegible] these [illegible] of the [illegible] third- [illegible] able. [illegible] as [illegible] cost [illegible] ion of [illegible] num..

Other people have calculated the addition at half-a-crown. The amount, in any event, would be inconsiderable, and to throw the cost on the motoring public appears to the committee to be the only practicable method of collecting the money. The medical profession is unlikely to feel much exhilaration at the prospect of the exiguous fees which the Select Committee regard as sufficient payment for work possibly difficult and anxious and likely enough to interfere seriously with the claims of ordinary patients. But since, more often than not, the doctor at present does not get a penny, he may console himself with the philosophical reflection that something is better than nothing.

VITAMIN B_2 AND GLOSSITIS

THE clinical symptoms produced by a diet lacking in vitamin B_2 or conversely, its curative properties, are difficult to estimate, since products rich in this vitamin contain also other substances, at present unidentified, to which any effects noticed may be due. D. K. Miller and C. P. Rhoads[1] have recently sought to elucidate the action of vitamin B_2 by prolonged feeding of dogs on diets partially but not completely deficient in this vitamin and have been able to produce symptoms very similar to those of sprue. The diet was low in protein, high in fat and carbohydrate, and contained only that amount of the vitamin-B complex which is present in rice polishings. A proportion of dogs developed stomatitis, glossitis, and gastro-intestinal disturbances. Anæmia occurred in 60 per cent. of the animals, and in half of these it was severe in type. Histological study of the bone-marrow in the latter group showed features similar to those occurring in sprue or Addisonian pernicious anæmia. A. M. Hutter, W. S. Middleton, and H. Steenbock[2] have also been able to produce glossitis in rats by diets deficient in vitamin B. These experiments, together with earlier investigations, suggest that the glossitis of sprue and Addisonian pernicious anæmia may be due to lack of part of the vitamin-B complex. On the other hand Hutter and his colleagues found that the addition of vitamin B in the form of yeast to the diet of patients with Addisonian pernicious anæmia was not invariably successful in curing the glossitis unless liver was also given. Clinical glossitis cannot therefore always be due to a simple deficiency. The exact character of the yeast used was unfortunately not defined. L. Wills has clearly shown that the antianæmic potency of yeast varies according to its preparation, and is not related to its vitamin-B content, and it is possible that the antiglossitis effect of yeast shows corresponding variations. It is clearly essential for workers to use some purified source of vitamin B_1 and B_2 for dietetic experiments.

THE MIND AND BRAIN OF THE KENYA NATIVE

AT a recent meeting of the Eugenics Society Dr. H. L. Gordon described a series of investigations, carried out by himself and Dr. F. W. Vint, upon the brain and mind of the Kenya native. A series consisting of several thousand male natives, representative of the different tribes found in Kenya, were examined by anthropometric and psychological methods, the former according to the technique elaborated by Prof. R. J. A. Berry and the latter by performance tests and the Porteous maze test. The results of the psychological tests point to the conclusion that, according to the standards used, the average Kenya native exhibits a definite degree of mental inferiority as compared with the average European. These findings were generally supported by the examination of a series of 100 brains of adult male natives performed by Dr. Vint in the Government Medical Research Laboratory. Dr. Gordon concluded his address with a plea for the institution of a comprehensive investigation of the same material under approved scientific auspices. If, as here suggested, a relative degree of cerebral deficiency characterises some of the native races under British trusteeship, consequences of the utmost medical, legal, and educational importance are raised for the imperial administrator. It is to be hoped that Dr. Gordon's plea will find a sympathetic hearing.

MEDICINE AND LITERATURE

THE Lloyd Roberts lecture, delivered before the Medical Society of London on Nov. 16th by Sir Humphry Rolleston on this subject proved, as was inevitable, seeing the lecturer, a thoroughly valuable disquisition, and one which librarians should keep as a book of reference. The practical difficulty of keeping pamphlets and reprints of lectures and addresses is a very real one to them, as to all who make collections of books, so that it is worth while mentioning that this essay should secure a place in libraries and be made easy of access there. How great has been the association between medicine and literature, apart from medical literature, is not realised until we have before us an orderly category such as Sir Humphry Rolleston provided, and the multifarious information is supported by amusing references and a wealth of accurate dates.

THE COOKING OF MEAT

OUR knowledge of the composition of common articles of diet is based almost entirely on analysis of uncooked food—a handicap to the physician prescribing for the needs of individual patients. Cooking has hitherto been considered mainly as an art, but Dr. R. A. McCance and Mr. H. L. Shipp, in a report[1] from the biochemical laboratory of King's College Hospital, have dealt with it as a scientific problem, directing their study to the cause and extent of the various losses caused to flesh foods by cooking. The effect of this inquiry is to upset a number of ancient and cherished prejudices. Many people who have never heard of the pellicle theory have a vague idea, encouraged by cookery books, and even by the Encyclopædia Britannica, that the "goodness" may be kept in meat by starting to cook it at a high temperature. The idea is that this will cause the proteins on the outside of the meat to coagulate, thus forming an impermeable skin which retains the water, salts, and protein in the meat. But Dr. McCance and Mr. Shipp find that it makes no difference to the losses whether meat is plunged straight into boiling water or placed in cold water and slowly heated to 100° C., and they suggest that to bring water to the boil or to raise an oven to a high temperature before inserting the joint is merely a waste of heat unless it can be supported on grounds of palatability or digestibility. Other things being equal, the best method of cooking is generally assumed to be the one which produces least loss, and cooking by steam, especially in the small autoclave or pressure cooker, is popularly believed to be very conservative. The investigation proves, however, that shrinkage and loss become intensified when the temperature is raised above 100° C., so that the only economy effected by pressure cooking as against steaming is economy in time and fuel. Both steaming and pressure cooking have the advantage over heating in water that all loss due to leach is avoided. The importance of this varies inversely with the size of the pieces of flesh cooked. Small pieces of fish should be steamed and not boiled in order to conserve the salts, whereas it makes little difference to a piece of meat of 1½ lb. or more whether it is cooked in water or steam. Those who like their meat well done will rejoice to learn that the much vaunted underdone beef has no advantage in nutritive properties over the well-cooked joint. The latter has shrunk to a greater extent, and will therefore feed fewer people, but, since the main part of the lost weight is water, pound for pound overcooked meat contains more protein and probably more fat than undercooked meat, and is thus a more concentrated food. The loss of water when meat is roasted is nearly all due to evaporation, and the loss of salts is slight, as they are left on the surface of the meat. Adherents of the electric oven claim that a joint roasted by electricity is less dry than one roasted by gas. The inquiry shows that this is due to the fact that there is less ventilation and therefore less evaporation in the electric oven. The joint may indeed be more juicy, and consequently more palatable, but from the chemical point of view the advantage is on the other side, because any method of cooking attended with evaporation tends to conserve the salts and extractives in the meat. Thus roasting, grilling, and frying all lead to smaller salt losses than steaming or boiling, and people who have a weakness for fish and chips may derive comfort from the knowledge that loss of salts accompanying the frying of fish is almost negligible.

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[1] Proc. Soc. Exp. Biol. and Med., 1933, xxx., 540.

[2] Jour. Amer. Med. Assoc., 1933, ci., 1305.

[1] The Chemistry of Flesh Foods and their Losses on Cooking. M.R.C., Spec. Rep. Ser. No. 187. H.M. Stat. Office. 2s. 6d.

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[1] See THE LANCET, 1933, i., 373.

[2] Ibid., p. 1361.

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THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

VII.*—PREVENTABLE DISEASES OF SCHOOL-CHILDREN

SCHOOLS are populated by aggregations of children at highly susceptible ages almost undiluted by the less susceptible adult, and moreover receive every term fresh batches of unsalted newcomers. Thus they have less herd-immunity than a natural herd or an ordinary family, and, as is only to be expected, they furnish us with some of the severest tests and most interesting problems of preventive medicine.

Protection against Preventable Diseases

Let us consider the preventive agencies under four general headings.

SPECIFIC RESISTANCE.

1. *Natural immunity* inherited or acquired by previous attack which may have been (*a*) "clinical"—i.e., known, obvious, and recorded; (*b*) "modified" as in measles modified by convalescent serum; (*c*) "sub-clinical" or so mild as not to have been noticed or recorded.

2. *Artificially acquired immunity* (*a*) by active immunisation (generally more or less lasting); (*b*) by passive immunisation (generally very evanescent).

NON-SPECIFIC RESISTANCE.

3. *"General" resistance* increased by diet, sunlight, fresh air, exercise, &c.

4. *Limitation of infection* by (*a*) isolation of cases: (*b*) search for carriers; (*c*) disinfection; (*d*) other methods of environmental hygiene, ventilation, and spacing out.

The subject is so vast that I shall not deal with 1 and 2, those interesting questions of immunity upon which, on Jan. 25th, you will hear Dr. R. A. O'Brien. He tells me that he will deal with diphtheria, scarlet fever, and the other notifiable infectious diseases; Dr. F. J. Poynton will speak to you on the prevention of acute rheumatism, and an important part of Section 3, the increase of non-specific resistance by a proper diet, will, no doubt, be covered by the lecturers on diet and vitamins. Although I have had to deal with one or two outbreaks of disease in schools due to water-borne disease, I shall not discuss them, since Dr. R. P. Williams has already told you about the necessity for a pure water-supply. My lecture, therefore, for the most part will be about my fourth heading.

Limitation of Infection

One of the first things in school-medicine which will strike you is that nearly all the great loss of school-time caused by illness is due to diseases which from a hospital-medicine standpoint are regarded as essentially minor diseases, and that more than three-quarters of this great loss is due to diseases spread by "droplet infection."

How much these diseases mean to elementary school-children is shown in the following Table, condensed from one compiled by C. C. Wilson and his co-workers (1931), who obtained their data from elementary school-children in New Haven, Conn. It is by no means a perfect picture, for it relates, unfortunately, only to one year, and one year's experience may differ greatly from another according to the varying prevalence of influenza, measles, and other infectious disease. Also it only takes into account conditions resulting in three days or more consecutive illness. However, the form in which the material is presented is a good model, for it shows not only the proportion of all cases of illness due to each disease group, but also the proportion of school-time lost through each group.

ILLNESS IN ELEMENTARY SCHOOL-CHILDREN, NEW HAVEN

Illness of three days or more.	Per cent. of all cases of sickness.		Per cent. of total days of sickness lost.	
Colds	37·3	53·7	24·3	38·9
Sore-throats (tonsillitis, &c.)	12·7		8·3	
Other respiratory	3·7		6·3	
Measles	10·2	27·9	15·4	44·2
Mumps	11·1		12·1	
Whooping-cough	3·4		12·1	
Chicken-pox	2·2		2·8	
Diphtheria	0·7		1·2	
Scarlet fever	0·3		0·6	
Other diseases	15·9		14·4	
Trauma	2·5		2·5	
Total	100·0		100·0	

You all know how much influenza varies from year to year in schools as elsewhere; 1930, for example, in this country was singularly free from it, whereas 1931, 1932, and 1933 all had epidemics in many schools in the Lent term.

Measles in elementary schools shows an almost regular two-year periodicity. The enormous variation of measles in London elementary schools—34,000 odd in 1930, 3800 odd in 1931, and 35,000 odd again in 1932—is in contrast with the almost steady incidence of scarlet fever during these years. This year however there has been a considerable increase in incidence of scarlet fever.

PUBLIC SCHOOLS

The public schools to which my subsequent observations will mainly refer show a rather different picture, though some large features are much the same. Colds and sore-throats show much the same prominence, but owing to the higher age-grouping the "specific" infectious diseases naturally loom less large.

Of the total cases admitted to a public school sanatorium, we should probably find that on an average for a number of years one-quarter of all admissions would be for epidemic influenza; one-quarter for catarrh, chill, and nasopharyngitis; and one-eighth for definite sore-throat, whilst about one-tenth of admissions would be for the common infectious diseases of childhood.

Droplet Infection.—A committee of the Medical Research Council has for some years been investigating the prevalence and spread of epidemics in residential schools, especially those spread by "droplet infection." This investigation is on two lines: (1) epidemiological, into the conditions governing the spread of such epidemics in schools; (2) bacteriological, in cases where the more serious complications, such as pneumonia and ear disease, occur in epidemic form. When their report appears, reliable estimates of the total time lost owing to illness and of the proportions due to the various diseases may be hoped for. In the meantime we can estimate roughly that diseases spread by droplet infection are responsible for 80 per cent. of all educational time lost by disease in public boarding schools, an average total of 10 days per annum per boy and 12 days per annum per girl. This estimate of 10 days absence seems also roughly to apply to the elementary school-child, although his terms are longer.

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* The lecture in this series which was to have been delivered by Dr. C. B. Heald on Nov. 23rd has been postponed to the end of March, 1934.

Apart from all questions of suffering and anxiety, this involves a serious financial loss, for each school boy-day in an English boarding-school may be roughly estimated to cost the parent £1. The monetary value of the education lost, therefore, in a public school of 500 boys owing to droplet infection is on an average £4000 per annum, apart from all costs of nursing and medical care, and the dislocation of all school routine, both work and play, which an epidemic involves. To prevent some at least of this droplet infection is our ideal.

The Organisation of a Preventive Service

How are we to organise our preventive service? The first thing the successful strategist arranges for is information; he builds up an intelligence system.

RECORDS

Supposing you to be the medical officer of a boarding-school, I advise you to keep for preventive work at least three sets of records. The first you will probably find already kept at the school—a card index with the previous medical history of each boy. The second is a daily incidence chart for all illnesses, but of this more later; and the third consists of the bed charts of all dormitories.

Records of Medical History.—From the first—the records of each pupil's medical history—you will not only get a good idea of the relative proportion of immunes to any disease, but you can also map out an immune chart of any dormitory or class-room. The proportions of pupils immune by reason of recorded previous attack at the time of their entry to their public schools have been calculated by several observers—e.g., L. R. Lempriere (1932) for boys, J. H. P. Paton (1926) for girls. I will not trouble you with their exact figures, but you can reckon roughly that 70 per cent. of the boys (not the same 70 per cent., of course) will be immune to each of the following: measles, chicken-pox, and whooping-cough; that about 20 to 30 per cent. will have a history of attack in the case of mumps and German measles, but that only 5 to 8 per cent. will have a history of scarlet fever. Girls will have rather lower percentages throughout. A Dick test for susceptibility to scarlet fever will show much higher figures for these well-to-do children than you would expect from the percentages given in the text-books, which are based upon tests done on elementary school-children; and you may assume that 66 per cent. of these public school boys are Dick-positive or susceptible at entry.

Incidence Charts.—The second record—a daily incidence chart of every case of illness occurring in the school (and in each individual house of the school if it be divided into houses)—is, in my opinion, as necessary to a proper understanding of the health of a residential school as a temperature chart is to the study of the illness of an individual.

Dormitory Bed Plans.—The third form of record—dormitory bed plans for every dormitory—can be prepared with very little trouble by the prefects of the dormitories. You should know your dormitories, their floor and window areas, their cubic space and all their features thoroughly. Class-room desk plans are sometimes valuable, especially in day schools; but in the modern boarding-school the child usually spends as much or more time in mathematical, science, and language "sets" or "divisions" as he or she does in "form," and the matter is a very complicated one. W. F. Reasner, of Minneapolis (1923), has prepared charts showing (1) the spread of measles in a class-room from an unrecognised case of measles, and (2) the effect of prompt isolation of a contact, when no spread occurred. It is, however, in scarlet fever and diphtheria that these class-room charts are most likely to be useful.

Some Common Diseases

Of the more dreaded but happily much rarer diseases of the nervous system spread by droplet infection, such as poliomyelitis and cerebro-spinal fever, I shall not have time to speak, but let us consider seriatim a few of our most frequent enemies in schools, such as influenza, measles, and tonsillitis.

INFLUENZA AND MEASLES

Influenza.—The explosive character of an influenza epidemic is admirably seen on daily incidence charts, which give almost as good an indication of the diagnosis as does the clinical character of the cases. The attack-rates may be enormous. In 1890, for example, half the boys of Chesterfield Grammar (day) school were attacked by influenza on a single morning, that of Monday, Jan. 27th. I have seen 95 per cent. attacked in a single boarding-house of a public school, and in November, 1918, every boy in a preparatory school was attacked. If attack gives any immunity against further attack, such immunity is very evanescent.

Inoculation, it is now pretty generally agreed, has no effect upon the incidence of epidemic influenza. For example, a comparison of the attack-rates on 3686 boys all of the same schools shows that 1684 inoculated boys had an attack-rate of 26·4 per cent., 2002 uninoculated boys had one of 28 per cent.—a difference statistically insignificant. The most promising way whereby influenza might conceivably be prevented in schools is perhaps hardly practicable at present; it would be by achieving the complete open-air school, with open-air dormitories, open-air class- and dining-rooms, and even open-air bathrooms and changing-rooms, for the latter are places in which it seems possible for infection to occur. J. Watt (1933) has shown that in a large sanatorium during the last large epidemic (1933) of influenza, though his staff had an attack-rate of 25 per cent., the patients in open-air conditions only had an attack-rate of 1 per cent. The two groups of course are not really comparable. Panel and floor heating could make such a school not only possible but even comfortable. "We are gradually realising," says M. D. Horst (1927), "the inefficiency of our system of indoor education with its sequelæ in the form of school infection." It seems particularly important to prevent influenza not only as the disease which causes the greatest loss of school-time but also because an attack gives no immunity.

Measles.—Measles is another disease which can scarcely be termed "preventable" in schools. Convalescent or adult serum can be used in hospital wards to postpone attack or to modify attack when the date of infection is accurately known. But this date of infection is hardly ever accurately known in schools, which makes even the modification of attack exceedingly difficult. With healthy children, a modified attack which confers a lasting immunity should be our aim. Postponement by the agency of evanescent passive immunity is useless in schools for healthy children.

Prevention of Complications.—I have been talking of two unpreventable diseases instead of sticking to my title. Why? Because influenza and measles owe their worst terrors to their complications, which are almost always due to secondary infections by hæmolytic streptococci and, less commonly, pneumococci, and we can do much to prevent these secondary infections.

First, we must try to keep down the carrier-rate of hæmolytic streptococci. Even in non-epidemic times, if throat swabs be taken from any sample of the general population, a considerable proportion will usually be found to be carrying hæmolytic streptococci. In a residential school we must not be surprised to find 10 to 15 per cent. carrying. So that you will understand why I spoke of the *limitation* of infection rather than of its total exclusion. The importance of keeping carrier-rates low is twofold, for as in the case of other infections, high carrier-rates of hæmolytic streptococci (say, 30 per cent. and over) mean not only a numerical increase of carriers but an increase in the proportion of profuse carriers—those whose swabs will give an almost pure culture of the organism. These are much more dangerous then sparse carriers. Both these factors inherent in a high carrier-rate increase the dosage of infection.

The tendency to high carrier-rates can be met, first, by the prompt isolation of every pupil with the slightest catarrh or sore-throat, and, secondly, by the strictest ventilation and spacing of all rooms, remembering also that the domestic staff, if overcrowded or badly housed, may form a source or reservoir of infection. Of dormitory infection I will speak later.

Dangers of Overcrowding.—Even more important are the precautions with regard to the actual patients with measles or influenza. The first cases are, of course, sent to the sanatorium. This probably has beds for some 10 per cent. of the school population. If the epidemic be large, this accommodation is inevitably insufficient. There is usually a particularly dangerous period when you are tempted to wonder whether, by squeezing in an extra bed or two, you can manage without adapting some ordinary dormitories for use as sick-rooms. Resist the temptation. The slightest overcrowding of patients in a measles epidemic is literally a deadly sin. Such patients, if crowded together, run a greatly increased risk of serious complications, due to pneumococcal or streptococcal infections, and should therefore be nursed in beds separated by a far greater interval than the three-feet space desirable for healthy boys sleeping in the ordinary dormitory. So, if it be decided to use an ordinary dormitory as a ward for pupils suffering from measles or influenza, remove half the beds used when the room is an ordinary dormitory, or leave them unoccupied, so that one unoccupied bed intervenes between any two occupied beds. This (if the dormitory beds are properly spaced in normal times) will give the proper nine-foot interval between the edges of beds used for infectious cases.

Measles, with its copious catarrh and incessant cough, has a "spraying" power unequalled in disease. If one measles patient be a carrier of hæmolytic streptococci he speedily passes this secondary infection to his neighbour in the ward, unless that neighbour be protected from him by sufficient space (such as the nine-feet interval between beds, which is the minimum standard of the Ministry of Health for infectious diseases hospitals). Boys who show any clinical signs of secondary infection with hæmolytic streptococci (such as earache, otorrhœa, or adenitis) should be immediately removed from a general measles ward and nursed in a special ward or, better still, in separate rooms.

The same probably holds for pneumonia. The spraying capacity of the measles patient who happens to be a carrier of virulent pneumococci is increased, whilst the resistance of the recipient has been lowered by his own attack of measles. B. A. Peters (1931) has recently demonstrated the danger of nursing complicated cases of measles in large wards. Debré and Joannon (1926) say: "Collective isolation, without individual isolation, is disastrous for measles patients, who should be placed in completely independent cubicles. . . . Complicated and uncomplicated cases should be nursed in separate quarters."

Completely isolated cubicles are an ideal which is probably unobtainable in a school sanatorium, but bed isolation by the sufficient standard of space previously mentioned should be attained.

TONSILLITIS

Tonsillitis is the cause of much sickness in schools, 12 per cent. per annum of a school population usually being admitted to sanatorium for tonsillitis or sore-throat. In epidemics the attack-rate may be very high. C. Haig-Brown, for example, in 1884 recorded an attack-rate of 63 per cent. in one autumn term in one house of Charterhouse School, 34 out of 54 boys being attacked, though the housemaster, his family, and 11 servants all escaped. An attack-rate of tonsillitis from 20 to 30 per cent. in one term is by no means uncommon.

Long the cinderella of diseases, tonsillitis has suddenly assumed a new importance. The work of J. Smith, of Aberdeen (1931), and others has shown how often it is the parent of puerperal fever, whilst Collis and Sheldon (1931), and A. F. Coburn in America (1931) have observed that the disease appears to have a direct causal relationship with acute rheumatism. Its intimate connexion with scarlet fever has long been known, and it now seems probable from the serological work of F. Griffith (1926, 1928, 1930) and others that acute tonsillitis and scarlatina, apart from the presence of a rash and the greater risk of nephritis in the latter, are almost identical conditions both bacteriologically and epidemiologically. So intimate indeed is the connexion that we may say that acute tonsillitis is the Mr. Hyde, the furtive other self of that brilliant Dr. Jekyll of disease, scarlet fever.

Acute tonsillitis is nearly always due to infection with hæmolytic streptococci (*Str. pyogenes*). An infection of throat with hæmolytic streptococci may produce varying clinical pictures in different persons, such as (1) healthy carrier state, (2) feverish pharyngitis and rhinitis without noticeable sore-throat, (3) tonsillitis, (4) scarlet fever; in exceptional circumstances, (2), (3), and (4) may be followed by otitis media or by acute rheumatism. I have explained that the hæmolytic streptococcus is almost always found in the throats of a proportion of healthy persons anywhere, its incidence varying with the locality, the season, and the hygienic circumstances of the community examined. W. W. C. Topley (1930) showed that in healthy persons living under different housing conditions in Manchester the monthly percentages of carriers of hæmolytic streptococcus ranged from 36 per cent. in November, 1925, corresponding with a period of high incidence of scarlet fever in the city, to zero in October, 1926.

In plate cultures of throat swabs taken from patients with acute tonsillitis, hæmolytic streptococci are almost invariably found in profuse or even in pure culture. In the earliest stages of scarlet fever they can be grown from throat swabs in from 90 to 100 per cent. of cases. They often multiply in the throat in measles, and are obtained from the ear discharge in at least 70 per cent. of all cases of otitis media. Some of the common ailments among school boys, such as febricula, feverish cold, naso-pharyngeal catarrh, or influenza, especially when these occur during outbreaks of tonsillitis or scarlet fever, are associated with the presence of hæmolytic streptococci in the throat, although the sore-throat symptom is often absent.

Epidemics of measles and influenza increase the spread of hæmolytic streptococci in schools, even when these have good hygienic conditions, but in addition two things must be remembered: (1) that epidemics of tonsillitis or the occurrence of "dropping" cases of scarlet fever or otitis media in schools are generally associated with a high carrier-rate of hæmolytic streptococci; (2) that epidemics of tonsillitis and high carrier-rates of hæmolytic streptococci are usually signs of the existence of environmental conditions which favour a rapid and easy transmission of infection.

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(To be concluded)

SPECIAL ARTICLES

MEDICINE AND THE LAW

Unregistered Practitioners and Diabetes Insipidus

AT a Warrington inquest, which began on Nov. 1st, Mr. S. Brighouse, the coroner, explained to the jury that he had been notified of the death by a document bearing the printed heading "C. C. Abbott, physio-medical practitioner," which stated that the deceased (a woman aged 43) had been suffering from diabetes insipidus for the past seven years. "The cause of death," concluded the document, "to the best of my knowledge is (1) diabetes insipidus, (2) inanition through heart failure"; then followed the signature of Mr. Abbott. No date of death was given and the signature was not that of a duly qualified doctor; the coroner therefore asked the police to make inquiries, and he directed a post-mortem examination at which Mr. Abbott was present. At the inquest Dr. W. E. Cooke, pathologist to the Wigan and Leigh Infirmaries, described the results of this examination. The dead woman's body was emaciated; the liver was enlarged and showed fatty degeneration, probably due to prolonged poisoning; in Dr. Cooke's opinion the cause of death was heart failure due to pulmonary tuberculosis. The father of the deceased said Mr. Abbott began to treat the patient six or seven years ago, and during her last illness had given her medicine and pills; the father had been told by Mr. Abbott that the treatment was chiefly for diabetes; tuberculosis was never mentioned; he himself thought Mr. Abbott was right because his daughter drank "a tremendous amount of liquid, chiefly water."

Dr. Cooke's evidence dealt as follows with Mr. Abbott's diagnosis. He was prepared to say absolutely that the patient never suffered from diabetes insipidus; this was a rare disease but it could easily be diagnosed during the patient's life. She had been treated for a disease she never had. It should have been apparent to anyone—without a medical examination—that she was suffering from tuberculosis. Had she been treated for tuberculosis she might have been cured; she would certainly have been living. Mr. Abbott, in the course of cross-examining Dr. Cooke, said "I still maintain to-day that my diagnosis is correct; I do not alter my diagnosis in spite of what Dr. Cooke has said." Mr. Abbott tendered himself as a witness, and the inquest was at first adjourned for a week in order to give him an opportunity to prepare his evidence. Owing to the illness of the coroner the adjournment is at present continued indefinitely.

Effect of Conviction for Manslaughter

A medical practitioner was convicted of manslaughter at the recent assizes at Newcastle; he had so driven his motor-car as to cause the death of a man on the road. His defence was that he had been working hard and had become drowsy at the wheel. There was no suggestion that he was under the influence of drink. The case against him, as put by Mr. Justice Travers Humphreys when passing sentence, was that he had found himself driving his car at 40 miles an hour on the wrong side of the road and had realised that it was because he had fallen asleep; he had nevertheless continued to drive at the same speed, and his recklessness in this respect had caused death. The sentence was a fine of £100 with costs. During his address to the jury for the defence Sir Henry Curtis Bennett, K.C., had dwelt on the "nearly fatal" effect of a conviction upon the doctor's professional career. The judge expressed himself, in passing sentence, as anxious to take no course which might have the effect of indicating to the General Medical Council his opinion that the defendant doctor was unfit to practise his profession. The Council, of course, have a statutory discretion. In cases of conviction for felony or misdemeanour the Medical Act declares that the Council "may, if they see fit," direct that the name be erased from the register. Judicial decisions in plenty declare that the exercise of this discretion is the responsibility of the Council alone. The judge indicated what he himself thought of the case at Newcastle, when he imposed a fine rather than a sentence of imprisonment after a verdict of manslaughter.

Dye Dermatitis

In the recent claim in the High Court for damages for dermatitis, contracted through the wearing of a piece of imitation astrakhan trimming, the plaintiff successfully surmounted the two main difficulties which arise in such cases. She had first to establish that the skin affection from which she suffered was caused by the trimming sold to her by the defendants. On this point Mr. Justice Goddard declared himself satisfied by the evidence of Dr. W. J. O'Donovan, whom he praised as a careful and fair-minded witness. The judge was impressed by the fact that the trimming material had been fashioned into a neck-wrap, worn so that it touched the open neck in front but not at the back. On the day after it was first worn a red spot, the size of a two-shilling piece, appeared on the outside of the throat, and the rash spread over the throat and upper part of the chest but did not attack the back of the neck. Dr. O'Donovan definitely stated that it was a case of dye dermatitis, and this the judge accepted—although experts, who had analysed parts of the neck-wrap for toxic substances, said their results were negative. The second point which the plaintiff had to establish was the absence of special idiosyncrasy. If she belonged to the class which Dr. O'Donovan compendiously described as "dermatological bad bargains," so that a substance was toxic to her which would not be toxic to ordinary human beings, then she would not have been entitled to succeed. The judge was satisfied that the plaintiff had not any such "personal, peculiar un-uniformity." Mere hypersensitiveness on the part of the plaintiff, it seems, would not have excused the defendants. If a shop sells trimming which is toxic to a sensitive person, the sensitiveness cannot be relied upon as a shield against liability. Goddard, J., who was trying the case under the "new procedure" rules without a jury, found as a fact that the plaintiff was not idiosyncratic nor even hypersensitive, and that she suffered from dye dermatitis. He awarded £22 11s. for the special damage she had incurred, and £150 damages as compensation for "a very painful and irritating complaint." Certain legal issues remain to be decided, since the actual sellers of the trimming claim to be indemnified by the wholesalers, who in turn claim indemnity from the manufacturers. The chain of liability may extend even further back to the dyers of the material and to Imperial Chemical Industries, Ltd., the manufacturers of the dye; the judge described it as an unusually protracted legal version of the House that Jack built. The question whether the fault was in the material itself or in the dye, though it will interest the parties to these indemnities, will not matter to the plaintiff. She has established a right important to ladies who go shopping. When they buy one and a half yards of imitation astrakhan trimming they do not want to purchase dermatitis as well.

IMPERIAL CANCER RESEARCH FUND

THE YEAR'S WORK

Dr. J. A. Murray, F.R.S., in his report notes that the work of the laboratory during the past year has been for the most part in continuation of the investigations recorded in the Tenth Scientific Report.[1] Interim accounts have since been published of some of the work on the action of radium on cancer cells, on the behaviour of normal and malignant cells in tissue culture, and on tar carcinogenesis. Publications from the laboratory during the year include also contributions to the discussion on the experimental production of malignant tumours held by the Royal Society in June. Dr. Murray was invited to open the discussion by defining its scope and surveying the principal features of the problems involved; his summary was published in THE LANCET of June 17th, 1933, p. 1301.

THE ACTION OF RADIUM ON CANCER CELLS

The results of the investigations by Mr. H. G. Crabtree and Dr. W. Cramer on the action of radium on cancer cells are of great interest and reveal an unsuspected complexity in the phenomenon of radiosensitivity.

In order to study the effects of various inhibitors of metabolism on the vital processes and viability of cancer cells, it was necessary first to determine the limiting concentrations and time of application of the substances used, which still permitted complete recovery. In the course of this work, which was discussed in THE LANCET of Sept. 9th, p. 600, remarkable differences were observed between the mode of action of hydrocyanic acid and that of iodo-acetic acid or sodium fluoride.

A clear distinction must be drawn between a diminution in metabolism from which complete recovery is possible, such as follows exposure to hydrocyanic acid in concentrations up to M/20, and a diminution in metabolism which is due to a poisoning of the cell, and which is, therefore, irreversible. Only the former can be described truly as an inhibition of metabolism. The toxic action of sodium fluoride and iodo-acetic acid in certain concentrations has not been taken sufficiently into account in previous work.

The problem of radiosensitivity of the cancer cell was seen to be bound up with the physiological activity of the respiratory mechanism but not with that of the glycolytic mechanism. If applied to the practical problem of radiotherapy this meant that the radiosensitivity of a given malignant cell was not a fixed property; an that the radiosensitivity of a malignant tumour was no necessarily homogeneous throughout the tumour, bu was the resultant of a variety of largely independen modifying factors which might vary in different part of the growth. The well-known fact that badly vascular ised tumours were radio-resistant found an explanatio in the observation that anaerobiosis made a cancer cel less radiosensitive.

TISSUE CULTURE

Mr. R. J. Ludford, D.Sc., has continued his work o the behaviour of normal and malignant cells in tissu culture in solid and liquid media. Vital staining b trypan-blue permitted a clear distinction to be mad between the tumour cells, carcinoma and sarcoma, whic do not segregate the dye, and the non-malignant associate cells which do. Only non-malignant cells were observe to emigrate from the tissue fragment in liquid media both malignant and normal cells emigrate when a plasm medium is used. The distinction between normal an malignant cells by these methods is not absolute, but i in part an individual peculiarity of the strain of tumou employed.

TAR CARCINOGENESIS

Mr. A. F. Watson, D.Sc., has carried out experiment on the influence on tar carcinogenesis in mice of the additio of fresh ox or horse liver to the diet. A greater proportio of the animals develop tar tumours, and they appea earlier than in the control series on the unsupplemente laboratory diet. The fresh liver need not be give throughout the whole period of tarring; the effect i obtained if the animals are kept on the unsupplemente diet for the first one or two months. This result contrast with the absence of effect on carcinogenesis of the specifi dietary variations which have previously been tried The experiments are being extended to other species tha the mouse.

CLINICAL RESEARCH

The grant from the Fund to Dr. A. T. Todd, of Bristol, in connexion with his researches on the treatment o inoperable cases of malignant disease with a combinatio of colloids and radiation, is employed in part payment o the salary of a biochemist, Miss Keyser. She is at presen testing colloids for toxicity and purifying the gum arabi used as a stabiliser for colloids. In addition she is carryin out routine estimations of various blood constituents from which it is hoped indications of the reactions o patients to the treatment may be obtained. These estimations are of necessity largely empirical in their preliminary stages and include determinations of pH, calcium, magnesium, and potassium in the blood-serum and fluid from standard blisters. Blood lipase estimations are also don systematically. The glutathione estimations, which were in progress earlier, have given no useful indications and have been discontinued.

Annual Meeting

At the annual meeting held on Nov. 16th, with the Duke of Bedford in the chair, Sir Humphry Rolleston, chairman of the executive committee, summarised the year's work and spoke of the cordial and close relations maintained with other workers and institutions.

The president made sympathetic reference to the loss sustained by the Fund in the death of four prominent members of the Fund, Sir William Watson Cheyne, Sir Frederick Andrewes, Sir Percy Sargent, and Sir George Makins. Sir Frederic Hallett, the first secretary of the Fund, who had been largely instrumental in drawing up its constitution, and had devoted all his energies during his 30 years of office to placing the Fund on a sound administrative and economic basis, had been made a vice-president on his retirement in November, 1932. His interest in the Fund remained keen in spite of failing health until his death in February, 1933, and his advice was constantly at the disposal both of the director and of Mrs. Félice Harvey, who succeeded him as secretary.

Sir Holburt Waring had consented to succeed

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[1] See THE LANCET, 1932, ii., 860.

Sir Percy Sargent as joint honorary treasurer with Sir George Makins, and would now be sole honorary treasurer. The president drew attention to the fact that during the 12 years of office of Sir George Makins the capital of the Fund had increased from £154,016 to £244,660, and the endowment fund from £16,000 to £62,590.

The establishment of the Miss Elizabeth Wills Allen research fellowship was particularly welcome, since Lord Atholstan's gift of £2000 for ten years came to an end last year.

The income from investments did not suffice to cover ordinary expenditure, which this year exceeded fixed income by £4788.

AUSTRALIA

(FROM OUR OWN CORRESPONDENT)

THE NEW SOUTH WALES HOSPITAL LOTTERY

THE New South Wales lottery was instituted for the purpose of aiding the public hospitals of New South Wales and maintaining the large monetary grants contributed annually by the government towards the upkeep of almost all the hospitals of the State, which grants were in danger of being seriously curtailed. In this maintenance of funds the lottery has been most successful. Its evolution has been not without interest from other aspects. It is still being violently opposed by most of the churches. At the time of the inception of the lottery this opposition was countered by a proposal from the then premier of the State, Mr. Lang, to withhold the lottery if those opposing it would provide an alternative. A church and state appeal was made, but failed completely and the lottery was then instituted. It is well-known that the present premier, Mr. Stevens, is opposed to the lottery but that his view is not shared by many of his Cabinet and in particular by the Minister for Health, Mr. Weaver, who has been most active in defence of the lottery. It is also known that many of the Cabinet, although against the lottery on moral grounds, realise that the increase in taxation, which its abolition would entail, would at the present time be very bad politics. The net result of the conflicting views, however, has been a considerable restriction of the activities of the director of the lottery; tickets are now limited to 5*s.* 3*d.* each, £1 lotteries are not allowed and the lottery is not advertised as formerly. Prior to the inception of the New South Wales lottery, the Government lottery of Queensland, and other lotteries received large sums of money yearly from New South Wales. These suffered very considerably when the New South Wales with its larger population became a competitor. Taking advantage of the restrictions fettering the New South Wales lottery, within the last few months the Queensland Golden Casket has held four large lotteries of £1 each and a fifth is in process of being held. It is estimated that at least from £40,000 to £60,000 in each of these lotteries has been subscribed from New South Wales and a distinct falling off has been evident in the subscriptions to its own lottery. This has given considerable anxiety to the Minister for Health and others, and demands have been made that the restrictions should be removed from the New South Wales lottery so that it may be able to withstand the competition. Statements have been issued in the press strongly defending the lottery on the grounds of expediency and urging that since it is much less likely to cause ruin to the public than betting and horse racing, these, which contributed much less to good objects, should first be eliminated.

Another aspect of the lottery, which is causing concern is the number of lottery shops which have sprung up. These sell one-seventh share in a ticket for a shilling, thus making a profit of 1*s.* 9*d.* on each ticket. It is estimated that at least £100,000 a year is lost to the lottery in this way. An attempt was made to prevent this practice, but on an appeal to the Courts, it was upheld as being perfectly legal. It is stated to be the intention of the State Parliament at its next sitting to declare the sale of share tickets in this way illegal and also to prohibit the gift of shares in lottery tickets as bonuses to those buying goods in shops, at present a common practice.

Within the last week, a definite pronouncement by the New South Wales Cabinet would seem to indicate that the view of the Minister for Health has prevailed as it has been announced that the Government cannot see its way clear to abolish the lottery until an effective and equable substitute is suggested, and further that it is intended to run a number of £1 lotteries of 100,000 or even a greater number of tickets.

AN ARCHITECT'S SANATORIUM

A SANATORIUM of remarkable design, which has been built at Paimio in south-west Finland, is described by Mr. P. Morton Shand in the *Architectural Review* for September. It has a central axis with radiating wings of different lengths which are aptly compared to the spokes of a badly broken wheel. Each wing has a different unit of construction, according to its exposure and its function, and the result is a group that gives the impression of having been planned from inside outwards.

The central block—or axis of the wheel—contains the staircases and lifts. From this projects, as one spoke, the main block (Fig. 1). Here the standard unit is the two-patient ward, whose requirements indicated a south-south-east exposure, so that the full morning sun might shine in on the beds of the patients, and the afternoon sun on the upper part of their windows. Here there are also solariums, which face due south.

The construction of the balconies is illustrated in Fig. 2, which represents a cross-section of one of the wings. The balconies are cantilevered one above the other on to a central column, and thus all obstructing pillars and supports are eliminated so that nothing intervenes between the patient, the wind, the sun, and the countryside (Fig. 3). A second wing contains the doctors' quarters, clinics, operating theatre, administration and common-rooms for the patients. The public rooms have been arranged so that they are never all in full sunshine at the same time; and a different view is commanded by each. Most of the rooms have higher south than north sides to allow the sunshine to penetrate to their remotest coners. Wherever possible the central corridor system has been avoided and side corridors have been used. Only one wing, which runs north by south and houses the laundry, store-rooms, bakery and kitchen, while also providing accommodation for the nursing staff, has rooms facing both ways. The power-house forms the fifth block, and its bunkers are connected with the railway siding by means of a tunnel. At some distance from these five wings stand two small groups of houses which will be used by the officials and employees.

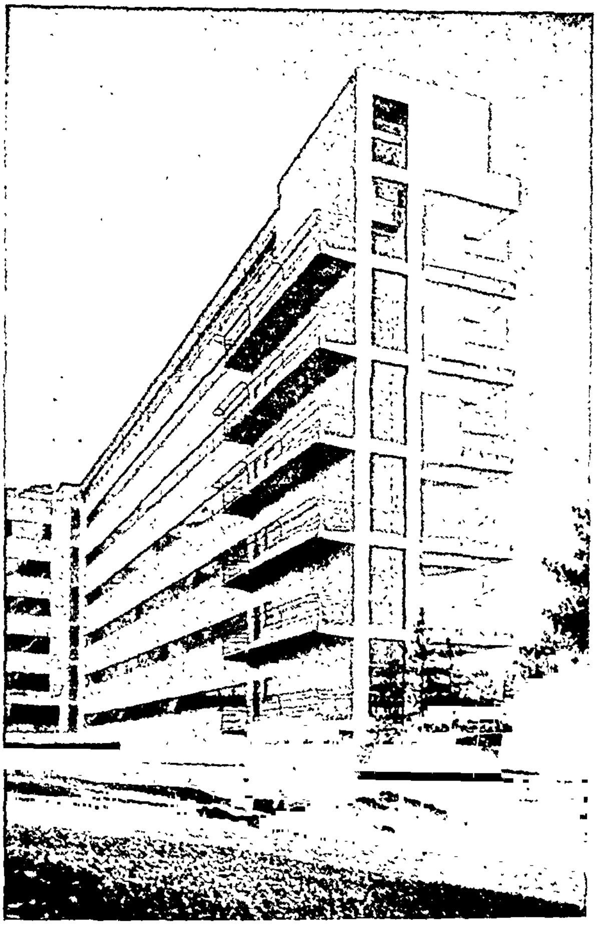

FIG. 1.—End-on view of the main block, containing two-patient wards, and solarium lying halls facing due south. *The* horizontal strips of windows light the side corridors.

One of the most interesting features of the sanatorium is the emphasis everywhere laid on the mental needs of the patient. The architect considers that his first duty is to preserve the "psyche" of the individual, and an example of his care is to be seen in the arrangement of the lying halls. There is a large roof garden for recently arrived and less infectious cases (120 patients to be arranged in groups of 20) and small solariums in direct communication with the divisional corridors are designed for those who are weaker and more infectious (24 patients arranged in groups of 4). Provision has also been made to carry out this grouping plan in other parts of the institution. The idea is that each group should be selected by the medical administration so as to create a different atmosphere. It is suggested that a patient would thus always be able to find congenial company and to obtain mental change by transference from group to group. The architect, who seems to have found his inspiration in a certain mistrust of experts, says "The idea, it is perhaps hardly necessary to add, was an architect's, not a doctor's. The doctors fail to understand it. Whether the medical profession will end by adopting it remains to be seen."

Further signs of the thought that has been given to the welfare of the patient are to be seen in the two-room wards themselves. These rooms have double windows reaching to within 40 centimetres of the floor, and are heated by means of low-temperature ceiling panels, which are said to give a very even distribution of heat, especially to persons in a recumbent position. Experiments have also been made with some new zinc radiators. Three of the

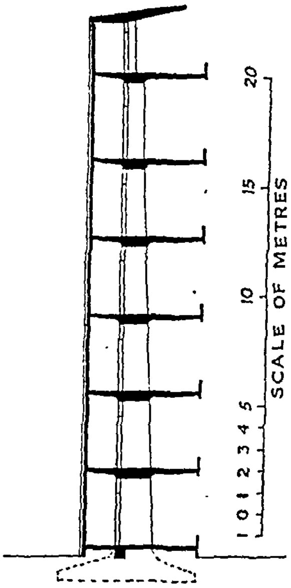

FIG. 2.—Diagram to show the construction of one of the wings. On the right, or sunny side, are the balconies. On the left there are no windows at all.

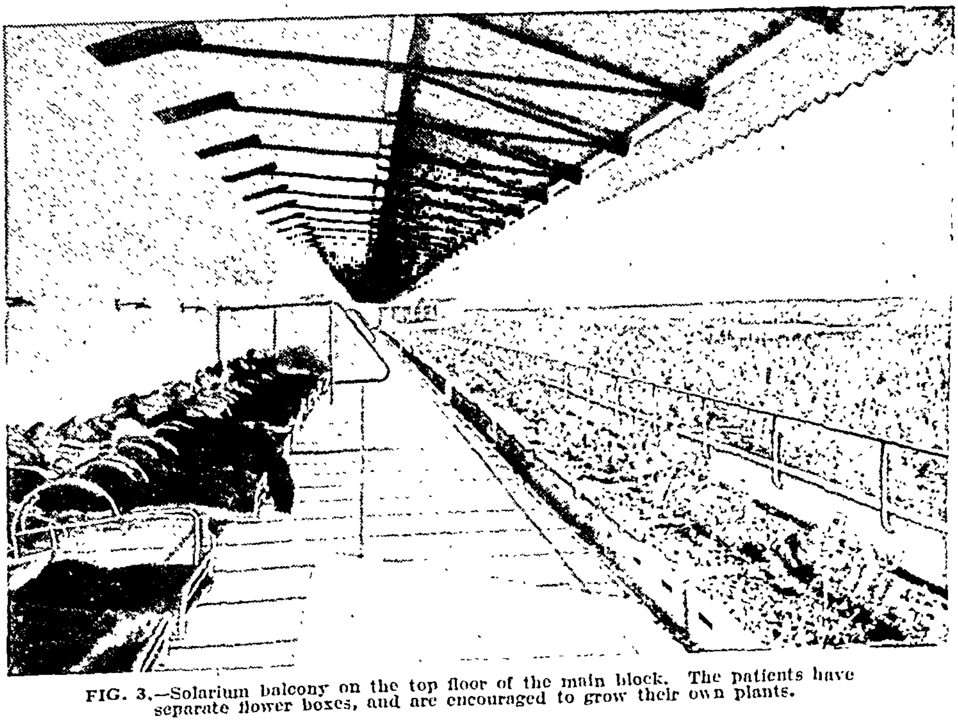

FIG. 3.—Solarium balcony on the top floor of the main block. The patients have separate flower boxes, and are encouraged to grow their own plants.

walls of the room are hard and one soft, and by this means better acoustics are achieved. All walls are enamelled in rather dull colours with the ceilings in darker tones. Another practical arrangement for the patient's comfort is the provision of special wash-basins, one for each patient; the water falls into the basin at an angle of 30° and there is no splashing. By means of shafts all plumbing and electric fixtures may be adjusted from the corridor, and no workman need enter a patient's room. The kitchen has been designed as one large room with hanging glass screens which prevent the smell of cooking from spreading and make supervision very easy.

On the wall of the doctors' common-room is a floor-plan of the wards which shows where every patient is to be found.

The sanatorium has cost about £107,000 and accommodates 290 patients. The architect is Alvar Aalto, who, with his wife, has specially designed all the furniture in it. Examples of this furniture may be seen at the exhibition of plywood furniture now open at Messrs. Fortnum and Mason, 181, Piccadilly, W.

The accompanying photographs are reproduced by courtesy of Mr. Morton Shand. Others may be found in the *Architectural Review*, from which Fig. 2 is taken, and in the *Listener* of Nov. 15th.

PUBLIC HEALTH SERVICES

Health in an Industrialised Community: a Sanitary Retrospect of Newcastle-on-Tyne

ONE of the few statutory obligations placed upon a medical officer of health is the preparation and submission of an annual report to his local authority and the Minister of Health in a form prescribed by the latter. Throughout the second half of the nineteenth century, when the earliest of these officials were feeling their way and the range of their activities was less extensive than it now is, their reports were often vivid documents, reminiscent of the writings of the first factory inspectors. Nowadays, the issue of the annual report is not the great event of the year but merely an incident in the work of a busy health department. It has become more or less impersonal and is apt, as Dr. Duncan Forbes of Brighton bluntly remarks in his report for 1932, to be "taken up with dry statistics of little interest to the casual reader." Apart from the burden of the manifold activities of the present-day medical officer, the explanation of this desiccation is partly to be found in standardisation brought about by the requirements of the Minister. Each year he asks every local authority to instruct its medical officer of health to prepare his report under a number of headings which run to nearly seven pages of closely printed foolscap. When these instructions have been complied with, and regard for a reasonable measure of economy is observed, there is little room left for the sort of writing which helps the local authority and the public to a comprehensive understanding of the methods and aims of public health administration. In most of the reports a brief prefatory note is all that the writer allows himself for this purpose.

An exception is to be found in the first annual report of Dr. J. A. Charles, who succeeded the late Prof. Harold Kerr as medical officer of health for Newcastle-upon-Tyne towards the end of 1932; nearly a quarter of his report is devoted to a historical survey of the sanitary circumstances of the area. Newcastle was not one of the towns which took early advantage of the powers given by the Public Health Act, 1848, and even in 1873, when the late Dr. H. E. Armstrong was appointed as its first medical officer of health, there were those who openly expressed the view that "the appointment would be of no more use to the town than an umbrella to a duck." This scepticism—or interested opposition—persisted not from lack of evidence. It is true that the commissioner sent to Newcastle by the Health of Towns Commission in 1845 appears to have taken rather a conservative view of his functions and, while stressing the lack of sewerage and proper water-supply, accepted the opinion of some of his informants that "the town of Newcastle ought not to be considered by any means unhealthy." The statistics for the year 1846 are an interesting commentary, for the deaths exceeded the births by 226—and this exceptional occurrence was not due to a low birth-rate. Cholera ravaged the town in that year and again in 1853, when there were 1500 deaths from this cause. Then came the Cholera Commission of 1854 with John Simon as their medical colleague. They swept aside prejudiced evidence and saw for themselves the dreadful squalor and overcrowding in which the people lived. Their report was apparently unwelcome, but a recurrence of cholera in 1865 led to the abandonment of the polluted Tyne as a source of water-supply and the water-carriage system of sewage disposal was gradually introduced.

But, if there were reactionaries in the seats of authority, Newcastle seems to have been fortunate in some of its citizens and especially in its medical men. On the initiative of the local medical society, a public health committee of inquiry was set up consisting of members of that body, of the council, and of the board of guardians. Dr. Charles describes their "Report of the Public Health during the year 1866" as a masterpiece of frank criticism and diligent research. They pointed out that 39 per cent. of the people were living in one- or two-roomed dwellings, and gave the numbers of such houses without any water-supply or privy accommodation whatever. For instance, houses of this type, with 4171 rooms and 13,747 inhabitants, neither possessed nor shared a water-closet or privy. The deaths from scarlet fever were estimated at 500, in a population of about 122,000, and 104 persons died of what appear to have been diseases of the enteric group. The crude death-rate from all causes was 32·4 per 1000. The rate of infant mortality per 1000 births was 191 and it was estimated that of every 100 children born only 61 survived to complete the first five years of life. This committee issued recommendations to the council, to the guardians, and to the citizens of all classes, which appear to have been almost as comprehensive as those subsequently made to the Government by the Royal Commission of 1869. Needless to say, they were not promptly acted upon, but the appointment of a medical officer of health—one of their recommendations—in 1873 saw the beginning of better things.

Much of the rest of Dr. Charles's report is devoted to recording and illustrating the subsequent improvements in the public health. For instance, the death-rate fell from 28·8 per 1000 in the quinquennium ended 1875 to 12·9 in that ended 1930. The corresponding fall in infant mortality was 191 to 83; for the zymotic diseases 5·0 to 0·7; for all forms of tuberculosis 2·18 to 1·09. These results have been brought about in spite of the persistence of those evil conditions of housing which are characteristic of the northern towns. At the census of 1931, one or two rooms still provided the sole accommodation of 29 per cent. of the population, and 23·3 per cent. of the population were still living under overcrowded conditions as measured by the standard of more than two persons to a room. There were 117 families living eight or more in one room, and 834 families, consisting of eight or more persons, living in two-roomed houses. Schemes in hand or projected in the five-years housing programme will remove and rehouse 20,139 persons, but at least 43,000 will remain in unsatisfactory conditions. Perhaps because of this overcrowding, the mortality from measles, whooping-cough, diarrhœa, tuberculosis, and pneumonia compares unfavourably with that of the rest of the country. The outspoken reports of the past which Dr. Charles quotes, his own retrospect and surveys, such as that conducted recently by Dr. F. C. S. Bradbury into tuberculosis in Tyneside, ensure that the council and the people of this area are being left in no doubt as to the facts. The medical mind, on the other hand, will harbour a doubt as to the element which herd-immunity has formed in the reduction of disease in towns like Newcastle and, consequently, as to the prospect of further improvement in health by reform of environmental circumstances. The history of rehousing in Dagenham and Stockton-on-Tees suggests that preventive medicine may find new fields of effort in new surroundings, unforeseen by the sanitarians of last century who were struggling to overcome the faults of the industrial revolution, and the fruits of whose labours many towns, like Newcastle, are only now beginning to enjoy.

The One-pipe System of House Drainage

In his contribution to the Bossom symposium, held in London last Tuesday under the Chadwick Trust, Dr. Charles Porter, M.O.H. for Marylebone, showed that in all probability the so-called one-pipe system was the only system in the early days of sanitation. Later, when defective drainage was found to be responsible for outbreaks of enteric and other fevers, schemes were devised which sought to keep drain emanations from entering buildings by insisting that drains should as far as possible be outside the premises, that the different classes of wastes should be kept separate, and that a complete and complicated scheme of trapping should be employed. In this way there grew up what he described as the British standard multiple pipe system. With increased demand for sanitary appliances of all sorts, especially in flats and hotels, this system, however, had become inapplicable, and to-day hardly anywhere but in Britain was anything but the one-pipe system or some modification of it seen in hotels and flats and even ordinary dwelling-houses. In London the L.C.C. had in course of preparation by-laws approving its introduction, and already certain London borough councils, conspicuously that of Marylebone, had waived existing requirements and permitted the adoption of the scheme for hotels and large blocks of flats. From the point of view of hygiene there is no doubt in Dr. Porter's opinion that the system has advantages, and on grounds of economy it has very real claims also.

The subject was discussed from the technical and practical side by Mr. W. H. Draper, sanitary inspector for Marylebone.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 11TH, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 1 (last week 1); scarlet fever, 4272; diphtheria, 1277; enteric fever, 35; acute pneumonia (primary or influenzal), 889; puerperal fever, 38; puerperal pyrexia, 109; cerebro-spinal fever, 10; acute poliomyelitis, 14; acute polio-encephalitis, 1; [illegible] . 5; dysentery, 14; ophthalmia [illegible] case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 14–15th was as follows: Small-pox, 3; scarlet fever, 3388; diphtheria, 2058; enteric fever, 22; measles, 398; whooping-cough, 122; puerperal fever, 21 mothers (plus 3 babies); encephalitis lethargica, 255; poliomyelitis, 5; "other diseases," 175. At St. Margaret's Hospital there were 13 babies (plus 4 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox or enteric fever, 10 (2) from measles, 12 (3) from scarlet fever, 13 (4) from whooping-cough, 43(6) from diphtheria, 57 (12) from diarrhœa and enteritis under 2 years, and 54 (17) from influenza. The figures in parentheses are those for London itself.

Of the deaths from diarrhœa, 6 occurred at Birmingham, 3 each at Leeds and Liverpool. Liverpool also reported 4 fatal cases of measles, Barrow-in-Furness 2. Of the deaths from diphtheria, 5 were reported from Liverpool, 4 from Manchester. Eight deaths at Birmingham were attributed to influenza, 3 each at Liverpool, Salford, and Rhondda.

The number of stillbirths notified during the week was 229 (corresponding to a rate of 40 per 1000 total births), including 40 in London.

PANEL AND CONTRACT PRACTICE

A Domiciliary Medical Service

Newcastle-upon-Tyne City Council has been considering for some time the establishment of an open panel system for the provision of domiciliary medical services. The scheme was initiated by the late Prof. Harold Kerr, then medical officer of health, and before it was finally accepted by the Ministry of Health prolonged discussions were necessary. It was only on Nov. 8th that it became effective for a trial period of one year. The transition necessitated an approach to over 8000 persons in receipt of relief, with a view to ascertaining whether they were receiving medical relief and, if so, the name of the practitioner selected by them on the new panel. In all, nearly 900 persons on medical relief were allocated according to their wishes amongst the 49 medical practitioners who had accepted service on the panel.

The scheme is to be introduced at present in the six of the ten poor-law districts in which the appointment of district medical officer has become vacant; in the other districts only when a vacancy occurs. The practitioner's contract will place an obligation on him to perform duties similar to those placed on a district medical officer by the Mental Treatment Act and Lunacy Acts (1890–1930), the Mental Treatment Rules (1930), the Poor-law Act (1930), or the Public Assistance Order (1930). His contract will be terminable on three months' notice by either party. Payment will be made from a pool consisting of an amount equivalent to the salaries, bonuses, emoluments, &c., for the year ended March 31st, 1930, amounting to £1200 for the districts concerned. The health committee will undertake the provision and dispensing of medicines at the public dispensary and the general hospital; emergency medicines dispensed by practitioners at hours when these are not open are to be paid for on an agreed scale. The total annual cost of the scheme is estimated at £2234 made up of medical officers' salaries (£1200), extra fees for special cases (£50), Newcastle Dispensary (£834), and Newcastle General Hospital (£150).

In regard to the issue of medical extras the practitioner on the public assistance panel is warned that the legal position is as follows :—

> The medical practitioner is not empowered to order food or articles of diet as meat, fish, milk, cream, eggs, stout, &c., for patients in receipt of public assistance. Any direction that he may give to that effect will only amount to an expression of opinion on his part, that relief in food or other necessaries is required. The power of granting relief rests with the public assistance committee, and in case of sudden and urgent necessity with the relieving officer, and any certificate given by the medical practitioner for the allowance of extra nourishment to any of his patients can only be regarded as a recommendation or statement of his opinion as to what is required.

Medical practitioners are requested only to recommend medical extras in very special circumstances. When it is considered advisable that some addition should be made to the dietary of the patient, they are asked to consider whether this cannot be done by suggesting the issue of one or other of the following: (1) extract of cod-liver oil and malt; (2) cod-liver oil emulsion; and in particular cases (3) milk.

Clearance of Lists

The panel committee for London has received intimation from the clerk of the insurance committee that, as all practitioners' lists are or will be cleared before the end of this year, Jan. 1st, 1934, should be fixed as the date from which such clearance should be made effective. In the early days of national health insurance it often happened that facts which should have been brought to the notice of a committee about an insured person were either never notified or only notified so tardily that many practitioners had on their lists the names of persons long dead, or who had moved elsewhere, or who had changed their name on marriage and thus became insured in another capacity. As a result a practitioner might have 100 redundant names on his panel list of 1000. As this inflation affected all practitioners alike, it did not act unfairly as between doctor and doctor in a particular area. The figures were, however, definitely incorrect, and it was decided soon after the armistice that they should be corrected or, to use the technical term, that the lists should be cleared. This proved to be a slow and laborious business, but a beginning was made in 1920–21, when a number of practitioners with initials in the early part of the alphabet had their lists cleared. It was, however, obviously unfair to deflate Dr. A's list when Dr. P's remained inflated, and before the clearing had proceeded very far it was decided (in 1927) by a joint committee representing both insurance and panel committees that removals should only take effect from a date to be agreed upon, and that in the meantime no practitioner should suffer any loss thereby. The scheme to be carried out included (1) a comparison of the number of names in the committees' register of persons accepted by practitioners with the number of credits recorded in those accounts upon which payment is based; (2) a verification that each name in a practitioner's list represented an insured person entitled to benefit. The effect of this clearance will be to reduce the number of units allotted to each doctor, but to increase the amount paid for each insured person. London is likely to lose 120,000 out of 1,924,000 units, and the value of the unit which is now 23·275*d.* per quarter will increase in value by nearly 6*d.* in the year.

THE DOCTOR'S DAY

"Come, tell me how you live," I cried,
"And what it is you do!"

XXVI.—THE LOCUM TENENS

MY FIRST EXPERIENCE

Within 30 hours of defeating the examiners in my final examination I had my baptism of the troubles of a locum tenens. The time is 3 A.M. Sleep is broken by a voice bellowing beneath the bedroom window: "Will you come at once to Mrs. Burt, of 44, High-street?" After a hurried dressing I find that my caller must not have heard my request for him to wait; he has fled, and the streets of a strange town are bare and empty. I pick up both the midwifery and the emergency bags and, without a soul in sight to help, I set out to find High-street. Of course I know now that I can expect to find that High-street in any town is in one of the low-lying parts, just as I can be reasonably sure that "Laburnum-gardens" in any industrial northern town is the street with the privet hedge near the coal heap. But every doctor should provide his locum with a map. And let it be a recent map; or, better still, the doctor can spend five minutes drawing one up. It will save hours of his locum's time, for verily the strange crescents, courts, and cul-de-sacs of council houses were not built to ease the task of a stranger finding his way about.

My first morning surgery lasted three hours, and even then some of the patients had mercifully taken fright at the sight of the strange features of the youth who was in place of their own beloved doctor. I remember the first patient was an old "chronic," who was suffering from a mild diarrhœa, accompanied, as he lucidly described, with "a kind of a roaring feeling." I wonder, gravely, can this be a rectal carcinoma? With commendable conscientiousness I make the fullest investigation, and the victim has his first rectal examination. The next patient is a child who has vomited for three days. I recall my mental list of causes of vomiting in children and go with painful slowness through them. Could this be an early cerebral tumour? Why, how strangely every answer of the anxious mother seemed to correspond with the answer I had written to the question on cerebral tumour which was in the medicine paper a week ago. But all these patients, and a dozen others similar, are destined to remain quite fit.

The surgery is over, and in walking down the street I hear a child exclaim in tones of awe, "There's the new doctor!" Pleasant words after the strain of the final. I feel proud of my calling, and rather gay in the face of the life of medical adventure which lies ahead. But my visits soon chill my gaiety. A frigid female says, "You are very young—I'm afraid you won't understand my case." Some patients conceal their disappointment very badly, and in the case to which I am called of a young primipara in the first stage of labour I can well understand her regret that she has not her own doctor to help at such a time. My questions to patients are halting and awkward. Worse still, I find that the patient and I do not speak the same language, and I do not quite "see daylight" through their dialect. At another case the mother teaches me something about measles; she knows the differential diagnosis better than I do. At my last visit I spend fully half an hour over investigating the case of a woman who says, somewhat pityingly, at the end, "Of course, Dr. Brainy understands me so." My spirits have ebbed away. Suddenly I remember she was the patient of whom Dr. Brainy had said, "Wish you would have a look at Mrs. X, I don't know what to make of her at all."

The evening surgery comes and I find double the number of faces I have been led to expect. This sudden popularity, I learn later, is not due to one's charm of manner or show of skill, but merely to the fact that a large number of panel or club chronics are anxious to get "a second opinion" (save the mark) from any new doctor on their case. In reality it is more likely the thirty-second opinion they have had; in some industrial practices the news that a new doctor has arrived in the district spreads like wildfire. Then I have my first experience of the less worthy type of panel patients, small in number but great in mischief-making, who may try to wheedle out of the locum certificates or prescriptions (for cod-liver oil, liveroid, &c.), which they well know would not be given by their own doctor. I also was persuaded by a miner to sign a certificate of suitability for admission to one of the industrial convalescent homes, when all he wanted was a cheap holiday at the expense of his more deserving comrades. He said he suffered from an ischiorectal abscess, and was unwilling to be examined; foolishly and unfairly I gave him a certificate—an action which was the source of much trouble afterwards. With my next patient I can find nothing wrong. He compliments me on the thoroughness of my examination. I smell a rat. Yes, I am right; he produces a subscription list for a local football club and wants half-a-crown. My last patient is an elderly lady, clearly in a state of agitation. She has with her a medicine bottle which, on holding up to the light, I see contains half-a-teaspoonful of medicine. Believe it or not, she wants this liquid analysed. She has heard the doctor has gone and not left an address; and I am touched by the terror she suffers at the prospect of being without her correct medicine. I promise I will call immediately should any untoward symptom arise from taking the medicine I have made up resembling the colour of the remaining fluid, and she departs with her fears somewhat allayed. My first evening surgery is ended. My medical education has begun.

A YEAR LATER

This is the story of a day in a country locum. At 5 A.M., returning from a confinement in a dull grey dawn, I crashed the doctor's car through a five-barred gate placed across a country lane. The farmer, early astir, is indignant; he demands and receives payment there and then (the county is Yorkshire). After the morning surgery I attend a coroner's inquest on an infant that died before medical help could be obtained. It is the first inquest I have attended; I am somewhat nervous, and I have carefully memorised my little speech. I am asked two brief questions and depart in three minutes with a guinea and a half, which, alas, I must hand over to my principal on his return. I resume my visiting, and go five miles by road and drive along a cart track for another two miles through purple heather. On arrival I am told my patient has just died. She was a farmer's daughter, aged 18, who has suffered from pulmonary tuberculosis for two years, although she has lived all her life on the farm. On the journey back I ponder on possible explanations of the infection and of her strange lack of resistance to it.

My next call is again some miles off the beaten track. There is only one building in the view which stretches for miles. My patient is a young married woman with diabetes. She gives herself insulin three times daily; the syringe and the insulin contrast oddly with the queer old building. The obliging country postman has left weekly samples at the surgery, and I am able to tell her that the urine is free from sugar. The country folk have enormous respect for our profession; my opinion is taken as law and no questions asked. My last visit is to a house where I am asked to attend to an injury. The man is suffering from a black eye, given to him by his faithful spouse, and I find the need of spiritual as well as physical healing. I may be only a locum, but I do see life.

At the evening surgery the first patient complains of abdominal symptoms. After a careful history and examination I suspect a psychoneurosis. I am much interested in this type of case, of which I knew nothing after qualification, having been taught nothing. What's wrong with the medical curriculum I try to put right by reading books by Culpin, Crichton-Miller, and Graham Howe. In this case I have the advantage of a current record of the man's medical history, written up for the last six years on his panel record cards—very interesting reading. In consequence I do not arrange for him to go into hospital, as I would have done a year ago, but ask him to call round after surgery hours, when I can pursue a little amateurish psychological investigation; or, more shortly and correctly, have a talk with him. When the doctor returns I shall learn more of the details. This will make a good addition to my list of such cases; in the course of the year many such opportunities have offered themselves of research in general practice.

My next patient, a country youth, asks me to draw two molars for him—without an anæsthetic; I frankly am frightened to do it and refuse. But my principal is accustomed to do extractions, tonsillectomies, and other minor surgical interventions without any of the fussy preparation which I would have thought necessary—and his results are admirable. It is interesting to compare the different generations. We recently qualified men are inferior in every way, with the possible exception of the recognition of minor endocrine disorders, antenatal work, and prophylaxis generally. Patients listen in open-eyed astonishment to what one regards as ordinary common sense in personal hygiene; they say, "but my doctor never told me that."

My last visitor brings a message from a patient whom I saw earlier in the day. I thought she required a smart purge and gave her five grains of calomel which, I am told, "nearly killed her." They have already called in another practitioner. This is the third complaint about my dispensing in this locum; and I try to forget the incident over a game of tennis to which some country people, with characteristic hospitality, have invited me.

WAYS AND MEANS

The newly qualified locum is generally paid 7 guineas per week, all found. A year's experience generally entitles him to 8 guineas; only in exceptional circumstances is he worth more. I feel better for resisting the temptation to charge 10 or 12 guineas when I know that the doctor is down with pneumonia, and that I am the only locum available. Sometimes I have been asked to live in lodgings which have not the amenities or the well-stocked library or larder of a doctor's house, and I have felt entitled to something extra on that account. I would advise a locum when departing to leave behind him liberal gratuities to the household staff, if for no other reason than as a premium against the risk of a return visit.

I obtain my jobs through various agencies. With a slice of luck I have had fairly continuous employment for two years; I now find that fewer doctors are employing locums owing to hard times. Naturally one must be reasonably trustworthy, tactful—and sober. (I notice that a London agent enters names of suitable locums in a book labelled "Locums fit to be sent out"!) Locum tenens is a heaven-sent opportunity to learn one's job in someone else's practice.

CORRESPONDENCE

THE ATTACK ON THE SLUMS

To the Editor of THE LANCET

SIR,—May I congratulate you on the leading article in your issue of Nov. 11th. In respect of the reference to my own calculations, recently published in the *Architects' Journal*, and Sir Ernest Simon's estimates in the "anti-slum campaign," I do not really think that the figures which you quote are comparable. It is therefore impossible to say that his err on the high side or mine err on the low. His figure of 4,000,000 is a rather vast one certainly, and I for one should not be prepared to estimate that there were in this country such a large number of unsatisfactory houses—this for reasons which I have stated elsewhere. But Sir Ernest Simon's immediate programme is to supply each family with a separate dwelling, for which need he gives a figure. My figure of 1,400,000 relates to housing needs at the present time, taking account both of overcrowding and unfit houses. I would agree that my estimate is in fact probably on the low side, but, being in no sense comparable with Sir Ernest Simon's, the considerations of which you take account in your article are really not applicable.

Again, you adjudge as too low my estimate that housing conditions in the areas not dealt with in my survey are half as bad as in the towns which were included. The report of Dr. Mackintosh on the health of Northamptonshire can hardly be said to prove that this is an under-estimate, as Northamptonshire is not a very large part of Great Britain.

I am, Sir, yours faithfully,
PHILIP H. MASSEY, B.Sc.
Mecklenburgh-street, W.C., Nov. 16th, 1933.

DIVERTICULA OF THE SMALL INTESTINE

To the Editor of THE LANCET

SIR,—A considerable experience of diverticula of the alimentary tract and of the associated literature has interested me in this subject during the past few years. Your annotation of Nov. 11th raises some interesting points. If those diverticula which are obviously secondary to traction, ulceration, or cicatrisation are excluded a large group is left which may be conveniently termed idiopathic—a word which in this instance will probably come to mean congenital. Single examples of the duodenal variety have not been recorded more frequently than multiple. The pancreas is developed from three duodenal buds—two ventral and one dorsal. Two of these buds persist as the ducts of Santorini and Wirsung, the third disappears; it is probable that occasional persistence of this or even of accessory buds, accounts for the solitary duodenal diverticulum which is usually perivaterian in situation. Certainly the case described by D. P. D. Wilkie (Edin. Med. Jour., 1913, ii., 219), in which the pancreatic tissue was found *in* the fundus, is explicable in this way. Solitary diverticula containing pancreatic tissue, found in association with the first few inches of the jejunum, may originate in the same manner.

All other solitary diverticula of the small intestine, jejunal or ileal, represent persistence of the enteric portion of the vitelline duct, associated with the name of Johann Meckel. In addition to the mechanical and inflammatory disturbances which may arise in sacs of this type, pathological changes are also liable to occur in connexion with heterotopic deposits of pancreatic or gastric epithelium. In my Hunterian lecture (1933) I recorded also a series of neoplasms originating in these diverticula.

Similarly it is probable that multiple diverticula, which are never encountered in connexion with the ileum alone, but invariably with the jejunum or duodenum, are congenital; they probably represent persistence of the duodenal cæca of fishes, and the diverticula of the duodenal and jejunal portions of the intestinal tract in pig and human embryos, described by Lewis and Thyng (Amer. Jour. Anat., 1908, vii., 505). J. R. Ryder (Vet. Record, 1930, x., 707) records the comparative frequency with which multiple diverticula of the small bowel are found in pit ponies of Icelandic stock. Some of the multiple diverticula of my own series had walls as muscular as those of the parent bowel, and none was complicated by sclerosis of the mesenteric vessels. Cases have occurred of general diverticulosis of the hollow viscera.

Such are the facts which lead me to believe in the congenital origin of these diverticula. The value of forcible distension experiments is dubious because it is unlikely that any comparable increase of the pressure within the bowel occurs under natural circumstances. The pouches rarely, if ever, occur in relation to organic obstructions, and diverticulosis associated with duodenal ileus is unknown. There is one great difficulty to overcome before an explanation which assumes herniation of a previously intact bowel wall is accepted—namely, the fact that the antimesenteric border of the bowel is subjected to much more stress than the mesenteric, yet these diverticula occur on the latter. It may be argued that the vascular openings are in the mesenteric borders, but it does not seem reasonable to believe that nature would leave these places vulnerable; otherwise diverticulosis would be more common. In my cases the pouches were in the peritoneal windows—i.e., between the vascular openings.

I am, Sir, yours faithfully,
GEORGE A. MASON.
Newcastle-upon-Tyne, Nov. 15th, 1933.

ACHOLURIC JAUNDICE

To the Editor of THE LANCET

SIR,—Dr. A. P. Thomson describes in your last issue (p. 1139) a case of acholuric jaundice with neither increased fragility of the red cells nor any evidence of a familial incidence. Although some cases are recorded in which this condition is apparently acquired, and others in which the fragility of the red cells is normal, yet when both these cardinal signs are absent it is surely better to describe such a case as an example of hæmolytic anæmia, and leave it at that. Moreover, Dr. Thomson's case is unusual in other respects. The considerable leucopenia and the low reticulocyte counts, the normal Price-Jones curve (made, it is true, a few months after splenectomy), the persistence of the pre-operative degree of anæmia, and of the positive indirect van den Bergh reaction a year after splenectomy—while they do not individually exclude the diagnosis, yet in sum they throw doubt on it.

These findings suggest an intermediate condition between splenic anæmia—the original diagnosis—and hæmolytic anæmia; there is evidence of both depressed blood formation (leucopenia and absence of reticulocytosis) and of excessive hæmolysis. Whatever the exact diagnosis may be, this letter is written to support Prof. Davidson's suggestion (Quart. Jour. Med., April, 1933, p. 543) that cases without a family history of the disease (and especially when in addition they do not show fragility of the red cells) should not be recorded as acholuric jaundice.

I am, Sir, yours faithfully,
Derby, Nov. 20th, 1933. DOUGLAS HUBBLE.

DIET AND WEIGHT

("IN DEFENCE OF ROTUNDITY")

To the Editor of THE LANCET

SIR,—Now that the echoes of Dr. Christopher Howard's Chestertonian bellow of wrath have ceased to rumble in the caverns of Fleet-street, we venture to assure him that we have no quarrel with the obese who carry their load of stones as airily as he does. May they long continue to bathe this grey world with the sunshine of their mellow philosophy, even if its rays do scorch the chitinous heads of the pseudo-scientific. And—to abandon the metaphor—may their shadows never grow less.

But we cannot allow Dr. Howard to ignore the fact that to some the burden of obesity is a real tragedy. This is particularly true of the type of obesity which converts a young girl into a deformed caricature, and it is not impertinence to refer to such persons, as we did in our previous letter, as "unfortunates."

Our purpose in writing was simply to protest against the widespread belief, which we have reason to think is erroneous, that dietetic restriction has no effect on these "endogenous" cases.

We are, Sir, yours faithfully,
F. B. BYROM,
DONALD HUNTER.
London Hospital, Whitechapel, Nov. 20th, 1933.

NUTRITION AND PREGNANCY

To the Editor of THE LANCET

SIR,—While appreciating fully the necessity for such teaching as is embodied in Prof. Mellanby's comprehensive survey of the essentials of nutrition in relation to childbearing, I cannot but regret the omission of vitamin B from his list of necessary factors. The most relevant statement I am able to find is that "a high cereal diet calls for increased consumption of protective foods such as milk and green vegetables to prevent damage." It is clear that the type of protection here referred to is that provided by vitamin B in its relation to calorific intake, but I doubt whether sufficient protection is provided by the articles of diet enumerated as advisable during pregnancy and lactation. Milk has been shown, by the studies of Donelson and Macy and others, to be frequently not a good source of the B-vitamins; Plimmer has estimated that most of the green vegetables and fruits have only a low activity. Egg yolk, sea fish, and calf's liver will contain vitamin B, but it is difficult to see from which sources, in this list, it is possible to derive more than a normal intake of vitamin B, even if that is provided. Since, as we have reason to believe, pregnancy and lactation increase the vitamin B demands of the mother three to five times, it is clear that the inclusion of vitamin B-containing foods in the diet is as necessary as that of vitamins A and D.

I have drawn attention to this point because in my own experience I have found it impossible to breed successfully from a colony of experimental rats without paying due attention to the supply of vitamin B. The survival rate among animals whose mothers were adequately fed was 88 per cent., as against only 16 per cent. among those whose mothers ate a diet limited in vitamin-B intake. As far as possible the diets were otherwise similar.

It would seem better therefore to recognise, as does Theobald in his consideration of the dietary necessities in pregnancy (Brit. Med. Jour, August 26th, p. 376), the wisdom of ensuring a sufficiency of vitamins A, B, C, and D in an otherwise well-balanced diet.

I am, Sir, yours faithfully,
A. Z. BAKER.
Wembley Park, Middlesex, Nov. 20th, 1933.

INDUSTRIAL WELFARE

To the Editor of THE LANCET

SIR,—In the reference to the centenary dinner of the Home Office Factory Inspectors Department, contained in your last issue (p. 1161), the following paragraph appears :—

> "Even in these later days, the cause of industrial welfare has often been advocated by philanthropic employers, less because of any realisation that their consideration for their work-people is in fact a business asset, but in order that their rivals shall also be called upon to incur the expense of welfare provisions."

I desire to enter a most emphatic protest against this comment on the grounds that it is both unfair and untrue. Far from wishing his trade rivals to be forced to adopt welfare and medical supervision, the up-to-date employer views the establishment of such services as a business asset and as an advertisement which gives him an advantage over other firms less enlightened. Furthermore, welfare and medical services, properly managed, are a definite factor in production and in reducing lost work-time, and are a saving, not a source, of expense. Consequently it can only be on the grounds of humanitarianism and disinterested public service that modern employers of labour recommend such services to others.

I am, Sir, yours faithfully,
London, Nov. 17th, 1933. N. HOWARD MUMMERY.

TREATMENT OF AN INDOLENT ULCER

To the Editor of THE LANCET

SIR,—The following case may be interesting from the point of view of treatment.

A French girl, aged 3, came under my care on July 14th, 1933. More than a year previously she had been treated by X rays in France for ringworm which had resulted in almost complete epilation with pigmented scarring of the whole scalp. Focal necrosis of bone had occurred from which sequestra had been removed. When I first saw her there was an indolent ulcer in the right occipital region measuring 2·5×2·2 in., which was clean. The base of the ulcer was covered with exuberant granulations. The mother stated that the ulcer had shown little disposition to heal during the past 12 months or so despite numerous and varied local applications. It was decided to try an occlusive dressing, and on July 23rd the ulcer was covered with two layers of Elastoplast cut into strips, one layer being applied longitudinally, the other transversely. The dressing was moved five days later. There was no sign of local sepsis and a slight general improvement was noted. Another dressing was applied. During the following week the patient bumped her head, causing the ulcer to bleed. Nevertheless there was again a definite improvement when the ulcer was inspected on August 6th. The patient returned to France and the mother was instructed to apply a fresh dressing at weekly intervals. On Oct. 2nd the ulcer was reported to be "the size of a little finger-nail." On Nov. 16th, less than four months after the treatment was begun, the ulcer was reported to be completely healed.

I am, Sir, yours faithfully,
Crediton, Devon, Nov. 19th, 1933. L. N. JACKSON.

TANNIC ACID FOR BURNS

To the Editor of THE LANCET

SIR,—The committee appointed by the Mines Department to report on the treatment of men burned in colliery explosions advocate (see THE LANCET, Oct. 28th, p. 1005) as the most suitable coagulant a 20 per cent. solution of tannic acid containing 1 in 1000 of acriflavine. It is suggested, presumably for convenience, that this preparation should be kept in the form of powders, but there is no definite instruction to the effect that stock solutions should not be kept. I wish to emphasise the necessity for storage in powder form by calling attention to the fact that moulds will grow quite well in aqueous solutions of tannic acid containing 1 in 1000 acriflavine. The detrimental results of mould growth in such solutions is well illustrated in a paper recently published by me (Quart. Jour. Pharm. and Pharmacol., 1933, vi., 3). If such solutions are kept for any length of time their antiseptic properties will suffer from adsorption of the dye by the tannin—an effect which it is possible to demonstrate by practical experiment.—I am, Sir, yours faithfully,

WILLIAM A. WOODARD.

Pharmaceutical Department, St. Thomas's Hospital,
Nov. 15th, 1933.

THE LATE DR. E. E. MADDOX

To the Editor of THE LANCET

SIR,—In your obituary notice of Dr. E. E. Maddox last week there is a statement which is not quite correct. Dr. Maddox did not himself describe an apparatus before the Ophthalmological Society in 1883. He was not a member of that society until 1899. His paper on a new method of Determining the Relation between Convergence and Accommodation was communicated to the society by Prof. W. S. Greenfield, of Edinburgh, and will be found in Vol. III. of the Transactions of the society.

I am, Sir, yours faithfully,

Nov. 20th, 1933. A. H. T.

OBITUARY

ERIC DALRYMPLE GAIRDNER, D.S.O., M.B. Glasg.

WE regret to announce the death of Dr. Eric Dalrymple Gairdner, which occurred on Oct. 20th, at Ayr, at the close of a short illness. He was educated at Rossall, proceeding for his medical training to the University of Glasgow, where his father, the late Sir William T. Gairdner, was the distinguished professor of medicine, and where he graduated M.B., Ch.B. Glasg. in 1902. After holding the house appointments he became resident physician and, later, resident surgeon to the Royal Infirmary. This post he held till 1905, when he entered practice in Ayr, and at the outbreak of war was surgeon to the Ayr County Hospital. He joined up at once with the rank of major R.A.M.C. (T.), and had a brilliant military record. He was present with the Royal Scots Fusiliers in many important engagements, was wounded more than once, and more than once mentioned in dispatches. In 1916 he obtained the D.S.O., to which Order a bar was later added for an action of personal bravery that might well have gained him the V.C., for he was himself shot down while attending a wounded N.C.O. under heavy fire. He was awarded also the French Croix de Guerre, and the bronze medal of the Board of Trade for saving life during the torpedoing of a transport. At the conclusion of hostilities he served for a time with the Minister of Pensions before returning to Ayr as surgeon to the County Hospital. This post he resigned upon being appointed medical officer in Scotland to the L.M.S. railway. Dr. Gairdner was only 55 at the time of his death, and his life was shortened by the injuries which he received during the war.

THE LATE DR. A. L. BALY

Dr. G. F. Stebbing writes: I am glad to see that in your obituary notice of Dr. A. L. Baly last week you referred to his interest in boys' clubs. A most lovable side of his character was seen among them; he was readily accessible to every member of them, and took the greatest interest, not only in the boys themselves but also in their homes. He regarded their future careers as his especial charge, and a very large number of boys owe their start in life not only to his advice but in many cases also to his material help. One of those who worked with him in his clubs sends the following reminiscent note.

"Is Doc. here to-night?" "No." "Is he coming later?" "Not sure. Anything I can do for you?" "No. I just wanted to ask him something." This meant that the youngster was in trouble. When "Doc." appeared the questioner would hang about patiently until he could get a minute's private speech. Then, perhaps, a sore finger or bruised shin was examined and the pulse tested, and a battered stethoscope came into play. Mostly the lad was dismissed with a light heart. Sometimes the trouble was deeper—and of mind rather than body, particularly with older members. Then the interview was longer and ended with "Doc." calling cheerily after the departing youth, "Good-night, old man. Come round to my house Sunday morning. Don't be later than half-past ten."

Anyone familiar with Baly's actions and manner at the Fitzroy Lodge Club will recognise in this reminiscence a typical occurrence, and who can say how much good was thus done?

ERRATUM.—A passage from one of the tributes to the late Sir George Makins, which appeared in THE LANCET last week (page 1178), was inaccurately quoted. Sir Charles Ballance entered St. Thomas's Hospital not in the same year as Sir George Makins, but in the year in which his distinguished predecessor on the staff became qualified.

INDIVIDUAL AIDS TO HEARING.—We are informed by Radio-Aid Limited, of 45, Duke-street, London, W.1, that they find it necessary to make a charge for a trial of one of their aids to hearing, which are made individually to suit each person's needs and are not produced in the mass. The charge is to cover the expense of making up a suitable instrument and, in the event of its return, of fitting new batteries, sterilising the earpiece, and renewing the case. No charge is made if the machine is purchased. The minimum charge for a ten-day trial is 2 guineas, and more in exceptionally difficult cases, but seldom exceeds 5 guineas; a written quotation is given beforehand. Each patient is tested on an audiometer, and this service is free. Radio-Aid would, quite rightly, prefer to receive patients through their doctors, and it is obvious that patients, in their own interests, should consult an otologist before seeking a hearing-aid, so that a form of deafness which is capable of cure or improvement should not be overlooked.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Opening of New Session—King's Speech

On Friday, Nov. 17th, the Royal Assent was given by Commission in the House of Lords to the Expiring Laws Continuance Act, the British Nationality and Status of Aliens Act, the Firearms and Imitation Firearms (Criminal Uses) Act, the Local Government Act, the Road and Rail Traffic Act, and other Acts.

The new Session of Parliament was opened by the King in State on Tuesday, Nov. 21st. In the course of the Gracious Speech from the Throne His Majesty said that Parliament would be invited to give immediate consideration to a comprehensive measure which would put the Unemployment Insurance Scheme on a sound and permanent footing and would establish a new system for the assistance and welfare of the unemployed outside insurance. The Government intended in conjunction with the local authorities to press forward with the improvement of housing conditions by the clearance or reconditioning of houses unfit for human habitation and their replacement when demolished by dwellings which accorded with modern standards and could be let at reasonable rents. Measures dealing with the law relating to betting and gambling, the reconditioning of working-class houses, and regulating the hours of employment of young persons, and other conditions in the distributive trades would also be submitted. A Bill would be introduced to amend the Poor Law in Scotland. Other measures of importance would be laid before Parliament and proceeded with as time and opportunity offered.

Hospitals and Road Accidents

In the House of Lords on Nov. 15th the Road and Rail Traffic Bill was read the third time and passed. On Nov. 16th the House of Commons considered the Lords' amendments to the Bill when Mr. Oliver Stanley, Minister of Transport, moved that the House agree with the new clause inserted by the Lords on the motion of Lord Luke providing for the payment of expenses reasonably incurred by hospitals in the treatment of motor accidents. The changes which were made in this matter, as compared with the 1930 Act, were as follows: The provisions in that Act did not extend to out-patients. The hospitals would now be able to recover up to the sum of £5 for out-patients. The maximum sum in the 1930 Act in respect of an in-patient was £25, and it was now increased to £50. Under this provision they would be able to recover up to the maximum, but they would have to deduct from it anything which they received from the patient.

Mr. Denman asked when it was proposed that the provision of the clause should come into operation. A reasonable time should be given before this provision came into operation so that policies, which ran for a year, might not have this new liability thrust upon them without some reasonable time being given to the insurance companies to adjust their rates.

Major Hills said he had always felt that the section in the 1930 Act was insufficient. The hospitals were not receiving sufficient money; he was glad that the Minister had now increased the amount payable and added certain extra advantages also. He understood that the cost to the insured person would not be more than about 2*s.* or 2*s.* 6*d.* on his premium, which was a small cost to meet the great charge on the hospitals due to motor accidents.

Mr. Parkinson, on behalf of Members of the Opposition, thanked the Minister for this concession. They all knew the very great hardships placed upon the hospitals owing to road accidents. It was very unfair that those institutions had had to bear that heavy burden and that they had been unable to get any return from the people who had been injured. He did not think that there was any need to quibble about the cost of the premium of insurance as he was satisfied that there was no one in the country, who ran a motor-car, who would object for a moment to pay the increased charge on his policy in order to meet the obligations which might fall upon him as a result of an accident on the road.

Mr. Stanley said that under the original proposals the hospitals would only receive something like £30,000 a year, and the cost of this extended proposal must be considerably less; something in the nature of £15,000 a year.

The Lords' amendment was agreed to.

HOUSE OF COMMONS

WEDNESDAY, NOV. 15TH

Motor Omnibus Speeds and Road Accidents

Mr. Lovat-Fraser asked the Minister of Transport if his attention had been called to the continued increase in the accidents involving omnibuses in the metropolitan police area since the time schedules had been shortened; and if he would institute inquiries with a view to seeing that the existing dangerous speeds were discontinued.—Mr. Oliver Stanley replied: While there has been some increase in the number of accidents involving omnibuses in the metropolitan police area, I have no evidence that the new time schedules are responsible. I am, however, considering whether some further analyses of the figures might with advantage be obtained.

Transport of Acids and Dangerous Chemicals

Colonel Goodman asked the Home Secretary if he would take steps to regulate the transport of acids and dangerous chemicals and other materials by road.—Sir John Gilmour replied: The question of applying the provisions of the Petroleum (Consolidation) Act, 1928, to certain dangerous chemicals, with a view to regulating the conditions of their conveyance by road, is at present under careful consideration. The matter is one of considerable complexity, but there will be no avoidable delay in coming to a decision.

Medical Practitioners and Road Accidents

Mr. Doran asked the Minister of Transport if he could consider introducing early legislation to raise the motorists' driving licence from 5*s.* to 7*s.* 6*d.*, in order to meet the fees of medical practitioners who attended motor accidents, and who, at the present time, did not receive any certain remuneration for their services.—Mr. Oliver Stanley replied: I would refer my hon. friend to the answer I gave on June 29th (see The Lancet, July 8th, p. 108). The select committee have just reported on the Road Traffic (Emergency Treatment) Bill, and I can only say that I will take their report into consideration.

THURSDAY, NOV. 16TH

German Doctors and others in England

Sir Philip Dawson asked the Home Secretary how many Germans since Jan. 1st had taken up appointments as doctors, teachers, or lecturers in hospitals, colleges, schools, research departments, &c.; and under what conditions and for what length of time these appointments had been sanctioned.—Sir John Gilmour replied: About 80 Germans have been permitted to take posts as teachers in schools; the number is not in excess of those admitted in previous years. About 50 of these have come for short periods under a special agreement arranged by the Board of Education for a mutual interchange of German and British teachers, and most of the remainder are teaching German in schools which require a German teacher. As regards the other classes, about 130 research workers, medical and other, have found temporary accommodation in universities. With a very few possible exceptions these persons hold no formal appointment; they are merely given facilities to continue their research work for the time being in the hospitals or laboratories, and are not displacing British subjects.

Housing

Sir F. FREMANTLE asked the Minister of Health the number of houses erected, respectively, with and without public financial assistance during the year ended Sept. 30th, 1933: the corresponding numbers for 1932; and the average cost of such houses of four-roomed non-parlour type.—Sir HILTON YOUNG replied: 50,433 houses were provided with State assistance and 167,880 without State assistance in England and Wales during the year ended Sept. 30th, 1933, making a total of 218,313. The corresponding numbers for the year ended Sept. 30th, 1932, were 69,090 and 132,886 respectively, making a total of 201,976. (These numbers exclude houses of a rateable value exceeding £78; £105 in the Metropolitan area.) The average cost of four-roomed houses cannot be separately stated, but the average cost of all non-parlour houses in contracts let by local authorities (other than the L.C.C.) or in approved direct labour schemes in England and Wales during the year ended Sept. 30th, 1933, was £292. The corresponding figures for the year ended Sept. 30th, 1932, was £312. These average costs included the cost of paths, drains, and fences, but excluded the cost of land, roads, sewers, and architects' fees.

Sir F. FREMANTLE asked the Minister of Health the number of cottages erected in agricultural parishes during the years ended Sept. 30th, 1932 and 1933, respectively; and the average rental at which such cottages were let.—Sir HILTON YOUNG replied: The numbers of houses completed with State assistance in agricultural parishes in England and Wales during the years ended Sept. 30th, 1932 and 1933, were 4392 and 3103 respectively. I have no information as to the average rental of such houses.

Sir F. FREMANTLE asked the Minister of Health the number of houses reconditioned under the Housing (Rural Workers) Act, 1926 to 1931, during the years ended Sept. 30th, 1932 and 1933, respectively.—Sir HILTON YOUNG replied: The numbers of houses reconditioned in England and Wales under the Housing (Rural Workers) Acts, 1926 and 1931, during the years ended Sept. 30th, 1932 and 1933, were 1286 and 869 respectively.

Sir F. FREMANTLE: In view of that extremely unsatisfactory result, cannot the right hon. gentleman do something to move rural authorities to act in this matter which has now been hanging over for a long time?

Sir HILTON YOUNG: The hon. Member is aware that I recently addressed a circular on the subject to the local authorities, and it is undoubtedly bearing good fruit.

A Ministry of Insurance

Mr. SMEDLEY CROOKE asked the Prime Minister if he would consider the advisability of setting up a Ministry of Insurance to take over the whole of the financial administration of pensions, unemployment benefit, health insurance, and public assistance expenditure, in order both to save administration expenses and provide a nucleus for a comprehensive system of contributory all-in insurance.—Mr. MACDONALD replied: Consideration has been given from time to time to proposals on the lines of that of the hon. Member, but the conclusion has been that the financial and practical difficulties in concentrating the existing schemes in one administration and replacing them ultimately by such a scheme as the hon. Member has in mind are so serious as to outweigh any possible advantages. I do not think that a further review would be likely to lead to any different conclusion.

Sir F. FREMANTLE: Is it not a fact that the insurance scheme originated in a single measure in 1911, and that experience showed that the different branches had to be separated after a time in administration?

Mr. MACDONALD: That is so.

Unemployed Persons and Public Assistance

Mr. H. WILLIAMS asked the Minister of Health for the latest available date the number of persons, exclusive of dependants, who were in receipt of poor relief on grounds of unemployment; and how many of these were persons insured under the Unemployment Insurance Act and registered at an employment exchange, not so insured but registered at an employment exchange, and neither insured nor registered at an employment exchange.—Sir HILTON YOUNG replied: The following is the answer: The latest complete return of the number of men and women in receipt of out relief on account of unemployment relates to Jan. 1st, 1933, and does not give particulars of their condition in respect of insurance or registration. The number then was 122,298 men and 8273 women. The following Table gives the weekly averages of persons in receipt of outdoor relief and registered at an employment exchange during September, 1933. The relief to an unknown number of these persons may have been due primarily to sickness and not to unemployment.

	Insured.	Uninsured.
Men	74,875	33,926
Women	2,927	5,191
Total ..	77,802	39,117

I am unable to say how many persons in receipt of outdoor relief on account of unemployment are not registered at an employment exchange, but the number cannot be large.

Slum Clearance

Mr. ANEURIN BEVAN asked the Minister of Health the number of urban district councils in necessitous areas who had found it financially impossible to submit slum-clearance schemes; and what steps he proposed to take to assist them.—Sir HILTON YOUNG replied: No urban district council has informed me that on financial grounds it is unable to submit the programme which in common with other housing authorities it has been asked to furnish. The last part of the question does not therefore arise.

Major NATHAN asked the Minister of Health whether he intended to issue any manual with respect to the planning, design, and construction of the rehousing accommodation to be provided by local authorities for families displaced as a result of clearance operations under the Housing Act, 1930.—Sir HILTON YOUNG, in reply, said that a manual on the subject was about to be issued.

Malnutrition among Ex-Slum Children.

Mr. EDWARD WILLIAMS asked the Minister of Health whether other public medical officers in addition to Dr. G. C. M. McGonigle, of Stockton-on-Tees, had reported signs of malnutrition and physical deterioration in children who had been removed from the slums into new housing estates.—Sir HILTON YOUNG, in reply, said that no further report of the kind referred to by the hon. Member was known to him.

Town and Country Planning

Viscount ELMLEY asked the Minister of Health when the advisory committee on town and country planning would be constituted.—Sir HILTON YOUNG replied: This committee will be set up forthwith, and I am asking a number of representative organisations to suggest the names of suitable persons.

National Health Insurance Cards

Mr. LOGAN asked the Minister of Health the number of cards issued in respect of employed persons over the age of 65 under the National Health Insurance Acts.—Sir HILTON YOUNG replied: The number of cards issued in respect of these persons employed for one or more weeks during the first half of this year was approximately 330,000.

National Health Insurance Benefits

Mr. LOGAN asked the Minister of Health, (1) whether a person unemployed from July, 1932, to July, 1933, and who paid half the arrears of contributions to health and pension insurance would receive any monetary benefits for sickness or disablement in the year 1934, and (2) what benefits, other than free doctor and medicine and the conservation of pension rights, were available for a person unemployed for 12 months and who paid half the arrears due to unemployment in accordance with the Insurance Act, 1932.—Sir HILTON YOUNG replied: A person, who will be entitled to remain in health insurance after the end of this year and was continuously unemployed from July, 1932, to July, 1933, will be credited with 26 contributions in respect of that period, and even if no arrears be paid will be entitled to medical and maternity benefits during the year 1934 in addition to the conservation of his pensions rights. By paying ten arrears at 9*d.* within the time allowed he will become entitled to sickness and disablement benefits at the minimum rates in the year 1934, but the title to such benefits will not commence until four weeks after the date of payment of the arrears. The payment of further arrears will secure higher rates of sickness and disablement benefits.

FRIDAY, NOV. 17TH

Road Accidents

Colonel SANDEMAN ALLEN asked the Home Secretary whether, as a result of the special Return which he had recently obtained from all police forces in England and Wales, he could state the number of fatal and non-fatal road accidents; and the number of persons killed and injured in those accidents in the first nine months of this year, with corresponding figures for the first nine months of last year.—Lord ERSKINE replied: The returns of road accidents furnished by the police are not generally available until the end of the calendar year to which they relate. It was considered desirable this year to ask for a special return in respect of the first nine months of this year. The following Table shows the road accidents caused by vehicles and horses in England and Wales in the first nine months of 1933, with corresponding figures for 1932:—

Fatal accidents	4,533	4,227
Non-fatal accidents involving personal injury	127,953	122,069
Number of persons killed ..	4,688	4,314
Number of persons injured ..	151,396	141,711

MEDICAL NEWS

University of Oxford

Prof. Arthur Thomson has resigned from the Dr. Lee's professorship of anatomy as from Dec. 25th.

Schorstein research fellowship in medical science.—An election will be made to this fellowship in June, 1934. Candidates must be graduates of the university and hold a registrable medical qualification. They must be under 35 years of age on Oct. 1st, 1934. The fellowship is of an annual value of £200. Applications should be sent to the dean of the medical school at the university museum not later than April 30th, 1934.

University of Cambridge

On Nov. 17th the following degrees were conferred:—

M.B. and B.Chir.—W. C. Barber, I. G. Robin, W. S. McKenzie, and G. C. Martin.

M.B.—J. S. Barker and T. D. Day.

B.Chir.—E. J. M. Bowlby.

University of London

The Brown Institution lectures for 1933 will be given by Prof. F. W. Twort, F.R.S., superintendent of the institute, at the London School of Hygiene, on Dec. 13th, 14th, 15th, 18th, and 19th, at 5 P.M. The subject will be Present-day Problems in Bacteriology, and no tickets are required for admission.

The Geoffrey D. Duveen travelling scholarship for 1933–34, of the value of £450, has been awarded to Mr. Maxwell Philip Ellis, who proposes to investigate the healing of mastoid wounds and the relationship between mastoiditis and osteitis. A grant of £100 has been made to Mr. G. H. Livingstone, F.R.C.S., Duveen student for 1932–33, to enable him to continue his studies abroad.

London Jewish Hospital Medical Society

The fifth annual dinner of this society will be held on Sunday, Dec. 10th, at the Trocadero Restaurant, Piccadilly, W.1. Mr. Walter Elliot, Minister of Agriculture, will be the guest of honour, and Dr. M. D. Eder, the president, will be in the chair. The Lady Erleigh and Mr. James de Rothschild will also speak. The secretary may be addressed at the hospital, Stepney Green, E.1.

Royal Sanitary Institute

A sessional meeting of this institute will be held at Liverpool, on Friday, Dec. 1st. Dr. W. M. Frazer, M.O.H. for the city, will open a discussion on housing and slum clearance, and Dr. C. O. Stallybrass, deputy M.O.H., will speak on the prevention of measles by the use of human adult serum.

On the following day there will be visits to clearance areas, a housing estate, and a children's hospital.

Royal Northern Group of Hospitals

A post-graduate course will be held from Nov. 30th–May 3rd at this hospital, and it has been arranged as far as possible for the lectures to be given on alternate Tuesdays and Thursdays at 3.15 P.M. On the first Wednesday of each month from December to May a clinical lecture and demonstration will be given at 3.15 P.M. at the Royal Chest Hospital, City-road, E.C. The course is free to all practitioners, and further particulars may be had from the dean, Dr. E. G. B. Calvert, at the hospital, Holloway-road, N.7.

University of Leeds

Mr. George Armitage and Mr. G. W. Black have been appointed clinical lecturers in surgery and ophthalmology respectively. Dr. H. G. Garland has become honorary demonstrator in toxicology.

North-West London Medical Society

The annual dinner and dance of this society will be held at the Park Lane Hotel, Piccadilly, W., on Thursday, Dec. 7th, at 7.30 for 8 P.M. The hon. secretary is Dr. L. M. Green, 50, Brook-street, W.1.

Medical Officers of Schools Association

At a general meeting of this association to be held at 11, Chandos-street, Cavendish-square, London, W.1, on Friday, Dec. 8th, at 5 P.M. (tea at 4.30 P.M.), Sir Weldon Dalrymple-Champneys will read a paper on undulant fever.

British Serbian Units Branch

The twelfth annual reunion of this branch of the British Legion and of those who served Serbia during the war will be held at the Lysbeth Hall, Soho-square, London, W., on Saturday, Dec. 2nd, at 7 for 7.30 P.M. Lieut.-Colonel A. E. Kidd will preside. Tickets may be had from Miss C. M. Marx, 24, Melcombe-court, Dorset-square, N.W.1.

Hunterian Society

A meeting of this society was held on Nov. 20th with Mr. W. E. Tanner, the president, in the chair. Mr. P. J. Hannon, M.P., opened a discussion upon alcohol by affirming its value to the citizen. After tracing the long history of the use of alcohol by man, he stated that beef and beer had been the basis of national advancement, and referred to a medical commission as reporting that beer was a first-class article of food. The case for total abstinence was made out by Dr. J. D. Rolleston, who quoted the huge figures supplied by convictions for drunkenness in the country, and deplored the amount of money spent upon alcohol, the use of which, he said, was of no value to the citizen. He mentioned that in his own hospital he had persuaded his colleagues to dispense with alcohol in their treatments, as he had himself done for 30 years and had never regretted his course. Mr. W. J. O'Donovan, M.P., defended the use of alcohol on the grounds that it was an anodyne and valuable in days when life was a severe strain. Mr. J. Hugh Edwards followed Dr. Rolleston's lead in quoting the drink bill of the country and declared that, as a Royal Commission had found 30 per cent. of the poverty and 40 per cent. of the criminality of the country due to drink, those in favour of the drink traffic had a difficult case to defend. Colonel C. T. Samman spoke warmly in defence of the use of alcohol, when Dr. T. Rushbrooke alluded to fine careers that had been ruined by drink. Dr. Gerald Slot attributed the value of alcohol among other things to its promotion of cordiality; and Sir James Dundas-Grant could not imagine the medical profession giving up the medicinal use of tinctures, aromatic spirits, and brandy in certain cases. Dr. H. H. Sanguinetti closed the debate by asking the medical profession to take a more serious interest in the matter, if only because the returns from hospitals where no alcohol was given were at any rate as good as those from other institutions.

Certificated Blind Masseurs

Lord Moynihan has accepted the presidency of the Association of Certificated Blind Masseurs (Blind Chartered Masseurs and Masseuses).

A Debate on Tonsillectomy

As announced in our last issue, the Fellowship of Medicine has arranged a debate on the motion "that operations for the removal of tonsils are too often performed without adequate cause." It will be held at the house of the Royal Society of Tropical Medicine, 26, Portland-place, London, W., at 8.30 P.M., on Dec. 7th. The openers will be Mr. Herbert Tilley and Dr. Dan McKenzie.

Dangerous Drugs in the Irish Free State

The text of the Dangerous Drugs Bill, introduced to the Dáil by the Minister for Justice, was circulated last week. The Bill is intended to control the import, export, manufacture, use, and sale of certain drugs in accordance with the provisions of the Hague Convention, and the Geneva Conventions of 1925 and 1931. It is concerned chiefly with opium, cocaine, and Indian hemp and their derivatives, but it is provided that the Executive Council may, by order, extend the scope of the Act to other drugs. Very extensive power is given to the Minister to form regulations under the Act, and the drafting of such regulations will probably be more important than the phrasing of the Bill itself.

The Insulin Inquiry

An application by the Association of British Chemical Manufacturers—on behalf of British Drug Houses, Ltd., Boots Pure Drug Co., Allen and Hanburys, Ltd., and Burroughs Wellcome and Co.—to include foreign insulin in the list of dutiable articles under the Safeguarding of Industries Act was heard before a Board of Trade tribunal from Nov. 17th–19th. Mr. Henn Collins, K.C., was the referee, sitting with Prof. F. G. Donnan, F.R.S., and Prof. Samuel Smiles, F.R.S. On behalf of the British Chemical Manufacturers, Mr. Trevor Watson, K.C., said that the question to be decided was whether or not insulin was regarded as a chemical for inclusion under the Act. Prof. R. Robinson, F.R.S., called as a witness, said he would describe insulin as a fine chemical. His clients, Mr. Watson said, had no intention of raising the price of insulin if the duty were imposed. Mr. R. Moritz, K.C., stating the case for Messrs. C. L. Bencard, Ltd., importers of Danish insulin, contended that insulin was a protein, the composition of which was not fully known, and Prof. E. F. Armstrong, F.R.S., called as a witness, said he would not regard insulin at the present time as a unique chemical; he classed it as a protein. For the Board of Trade, Mr. L. F. Heald said that the Board must be satisfied that an article was a fine chemical before it could be placed on the list. The referee announced that he might take some time to arrive at a decision.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Nov. 27th.—8 P.M., ODONTOLOGY. Miss Freda Parsons: Speech Training of Cleft Palate Cases. (Demonstration.) Mr. E. A. Hardy: Dental Aspects of Cleft Palate Cases. (Film.) Members of the Section of Surgery are invited to attend.

TUESDAY.—5 P.M., MEDICINE. Discussion: Prognosis of Peptic Ulcers. Discussion to be opened by Dr. Charles Bolton, Dr. J. J. Conybeare, Mr. L. N. Pyrah, and Mr. A. M. Cooke.

WEDNESDAY.—5 P.M., Library will be closed. 8.30 P.M., RECEPTION by the President and Mrs. Warren Low. 9.15 P.M., Address by Prof. E. N. da C. Andrade: Ultra-violet Light.

FRIDAY, Dec. 1st.—10.30 A.M., OTOLOGY. (Cases at 9.30 A.M.) Hearing Aids. Discussion to be opened by Mr. C. S. Hallpike, followed by Sir J. Dundas-Grant: Simplified Methods of Determining Percentage of Actual Hearing-power in Tuning-fork Tests. Sir J. Dundas-Grant will give a demonstration on the method of measuring the half-amplitude period of tuning-forks. Cases will be shown. 4.30 P.M., LARYNGOLOGY. (Cases at 3.45 P.M.) Treatment of Carcinoma of the Œsophagus. Discussion to be opened by Prof. G. Grey Turner, Mr. F. J. Cleminson, and Dr. Walter Levitt. Mr. Walter Howarth and Dr. N. S. Finzi will also speak. Cases will be shown. Members of the Sections of Radiology and Surgery are invited. 8.30 P.M., ANÆSTHETICS. Dr. Etherington Wilson: Intrathecal Nerve-root Block. A New Technique.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Nov. 27th.—8.30 P.M., Discussion on Ward and Dormitory Infections (excluding the Exanthemata, to be introduced by Dr. J. Alison Glover, Dr. J. C. Spence, and Dr. E. Kaye Le Fleming.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

FRIDAY, Dec. 1st.—8.30 P.M. (at the Hotel Rembrandt, Thurloe-place, S.W.), Discussion on the Treatment of Heart Failure, opened by Prof. A. Fraenkel (Heidelberg) and Dr. T. Jenner Hoskin. Dinner at 7.30 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, Wimpole-street, London, W.

MONDAY, Nov. 27th, to SATURDAY, Dec. 2nd.—NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W. Evening M.R.C.P. Course. Tues. and Thurs. at 8 P.M.—LONDON LOCK HOSPITAL, Dean-street, W. Course in Veneral Disease. Afternoons and evenings.—BRITISH RED CROSS CLINIC, Peto-place, N.W. Course in Rheumatism. Tues. and Thurs., at 8 P.M.—INFANTS HOSPITAL, Vincent-square, S.W. Course in Infants' Diseases. Afternoons.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars-road, S.E. Course [illegible] oons.—PANEL OF TEACHERS. [illegible] us branches of medicine and [illegible] ly by arrangement with the [illegible] These courses are open only to Members and Associates.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

TUESDAY, Nov. 28th.—11.30 A.M., Dr. W. W. Payne: The Practical Use of the Sedimentation-rate (Biochemical Demonstration).

WEDNESDAY.—9.30 A.M., Skin Clinic. 2 P.M., Dental Clinic.

THURSDAY.—2 P.M., Tonsils, Adenoids, and Anæsthesia.

SATURDAY, Dec. 2nd.—9.30 A.M., Eye Clinic.

Medical and Surgical Out-patient Clinics: daily from Mond. to Sat., 10 A.M. to 12 noon. Medical Wards: mornings, 10 A.M., Mond., Wed., Thurs., and Sat.; afternoons, 2 P.M., Mond., Tues., Thurs., and Frid. Surgical Wards: Tues., Thurs., Frid. mornings, and Wed. afternoon.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

THURSDAY, Nov. 30th.—3.15 P.M., Mr. L. E. Barrington-Ward: Pre- and Post-operative Treatment.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL Post-graduate Lectures.

WEDNESDAY, Nov. 29th.—4 P.M., Mr. A. Gray: Prenatal Care.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, Nov. 27th.—3.30 P.M., Dr. Kinnier Wilson: Disorders of Cerebral Function: Aphasia, Apraxia, &c.

TUESDAY.—3.30 P.M., Dr. Carmichael: The Vegetative Nervous System.

WEDNESDAY.—3.30 P.M., Dr. Collier: Clinical Demonstration.

THURSDAY.—3.30 P.M., Dr. Walshe: The Motor System. Out-patient clinic each day at 2 P.M.

FRIDAY, Dec. 1st.—3.30 P.M., Dr. Walshe: The Motor System.

ST. PAUL'S HOSPITAL, Endell-street, W.C.

WEDNESDAY, Nov. 29th.—4.30 P.M., Mr. Stanford Cade: Radium Treatment of Epithelioma of the Penis.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Dec. 1st.—4 P.M., Mr. J. D. McLaggan: Tuberculosis of the Larynx.

CHARING CROSS HOSPITAL MEDICAL SCHOOL, Chandos-street, W.C.

SUNDAY, Nov. 26th.—10.30 A.M., Mr. N. C. Lake: The Surgery of the Sympathetic Nervous System. 1.45 A.M., Mr. H. G. E. Williams: (*a*) Dysmenorrhœa; (*b*) Menorrhagia.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.

THURSDAY, Nov. 30th.—4.30 P.M., Dr. R. D. Lawrence: Diet and Dietetics. 9 P.M., Dr. J. L. Livingstone: Asthma.

ROYAL INSTITUTE OF PUBLIC HEALTH, 23, Queen-square, W.C.

WEDNESDAY, Nov. 29th.—4 P.M., Dr. C. P. Blacker: Citizenship and Eugenics.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James Hospital, Ouseley-road, Balham, S.W.

WEDNESDAY, Nov 29th.—4 P.M., Dr. T. Tennent: Psychiatric Problems in General Practice.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Nov. 28th, and following THURSDAY.—5 P.M., Dr. A. C. Roxburgh: Cutaneous Syphilis.

ANCOATS HOSPITAL, MANCHESTER.

THURSDAY, Nov. 30th.—4.15 P.M., Mr. F. H. Diggle: Pharyngeal and Œsophageal Pouches.

MANCHESTER ROYAL INFIRMARY.

TUESDAY, Nov. 28th.—4.15 P.M., Mr. W. R. Douglas: Treatment of Malignant Glands of the Neck. (With Cinema Demonstration.)

FRIDAY, Dec. 1st.—4.15 P.M., Dr. W. Brockbank: Demonstration of Medical Cases.

LEEDS GENERAL INFIRMARY.

TUESDAY, Nov. 28th.—4 P.M., Dr. Ingram: Dermatological Cases.

GLASGOW Post-graduate Lectures.

TUESDAY, Nov. 28th.—3.30 P.M. (in the Faculty Hall, Vincent-street), Dr. Noah Morris: Glycosuria in Childhood.

WEDNESDAY.—4.15 P.M. (at the Ear, Nose, and Throat Hospital), Dr. W. C. Macartney: Ear, Nose, and Throat Cases.

Appointments

BOLTON, N. W., M.B., Ch.B. Manch., has been appointed Hon. Surgeon, Stockport Infirmary.

DAVIDSON, A. H., M.D. Dub., F.R.C.P.I., Master of the Rotunda.

GARLAND, HUGH G., M.D., Leeds, M.R.C.P. Lond., Honorary Demonstrator in Toxicology, Leeds University.

SANKEY, W. O., M.D. Lond., Regional Medical Officer, Ministry of Health.

WILLIAMSON, A. B., M.D., Ch.B. Glasg., Medical Officer of Health, Portsmouth.

Certifying Surgeons under the Factory and Workshop Acts: COOKE, E. R. C., L.R.C.P. Lond., M.R.C.S. (Great Haseley, Oxford); KNIGHT, R. G., L.R.C.P. Lond., M.R.C.S. (Milborne Port, Somerset); MONIE, J., M.B., Ch.B. St. And. (Airdrie, Lanark); and T. H. RHYS, L.R.C.P. Lond., M.R.C.S. (Pwllheli, Caernarvon).

Vacancies

For further information refer to the advertisement columns

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

All Saints' Hospital for Genito-Urinary Diseases, Austral-street, West-square, S.E.—Res. H.S. At rate of £100–£150.

Blackheath and Charlton Hospital, Shooter's Hill-road, S.E.—Hon. Consulting Surg.

Brighton, New Sussex Hospital for Women and Children, Windlesham-road.—H.P. and H.S. Each £100.

[illegible] *Hospital.*—Res. Anæsthetist and [illegible] of £130.

[illegible] At rate of £50.

[illegible] Consultant. 3 gns. per consultation.

Chester Royal Infirmary.—H.S. £150.

City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—Res. M.O. £250. Also H.P. At rate of £100.

Dewsbury and District General Infirmary.—Sen. and Second H.S.'s. £200 and £150 respectively.

Doncaster Royal Infirmary.—Cas. H.S. £175.

Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. At rate of £110.

Elizabeth Garrett Anderson Hospital, Euston-road.—H.P., Obstetric Asst., and Three H.S.'s. Each at rate of £50.

Erith and District Hospital.—Hon. Consulting Jun. Asst. S., Ophth. S., Orthopædic S., and Surg., Ear, Nose and Throat Dept.

Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.

Exeter, Royal Devon and Exeter Hospital.—H.P. and H.S. to Spec. Depts. Each at rate of £150.

French Hospital and Dispensary, 172, Shaftesbury-avenue, W.C. Anæsthetist. £25.

General Lying-in Hospital, York-road, Lambeth, S.E.—Jun. Res. M.O. and Anæsthetist. At rate of £100.

Glasgow, Victoria Infirmary.—Whole-time Asst. Radiologist. £550.

Great Yarmouth General Hospital.—H.S. £140.

Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—H.S. At rate of £100.

Hertford County Hospital.—H.P. At rate of £150. Also Hon. Radiologist.

Hospital for Epilepsy and Paralysis, Maida Vale, W.—Hon. Psychiatrist. Also Two Med. Regs. Each £100.

Hospital for Sick Children, Great Ormond-street, W.C.—H.P. and H.S. Each at rate of £100.

Hospital for Women, Soho-square, W.—Res. M.O. At rate of £100.

Hull [illegible]—Third H.S. At rate of £150.

Infan [illegible] *Westminster.*—Clin. Asst.

King [illegible] *Midhurst.*—First Asst. M.O. £450.

London County Council.—Temporary District M.O. £200.

London Hospital, E.—Medical First Asst. and Reg. £300.

London Jewish Hospital, Stepney Green, E.—Surg. Reg. 60 gns.

Manchester, Ancoats Hospital.—Res. S.O. £200. Surg. Registrars.

Manchester Babies' Hospital, Burnage-lane, Levenshulme.—Jun. Res. M.O. At rate of £50.

Manchester, Withington Hospital, Didsbury.—Lecturer. 1 gn. per lecture.

Middlesbrough County Borough.—M.O. for Maternity and Chil Welfare. £450.

Mildmay Mission Hospital, Austin-street, E.—Asst. Cas. At rate of £125.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Radium Office £700.

Northwood, Middx., Mount Vernon Hospital.—Asst. Cli Pathologist. £500.

Norwich, Norfolk and Norwich Hospital.—H.P. £120.

Oxford University, Dr. Lee's Professorship of Anatomy. £1400.

Plymouth, Central Hospital.—H.S. At rate of £150.

Plymouth, South Devon and East Cornwall Hospital.—H.P. an H.S. Each at rate of £120.

Preston, Biddulph Grange Orthopædic Hospital.—Jun. H.S At rate of £150.

Princess Beatrice Hospital, Richmond-road, S.W.—Res. M. At rate of £110.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—Res. M.O. £200. Also H.S. At rate of £125.

Princess Louise Kensington Hospital for Children, St. Quinti avenue, W.—H.P. and H.S. Each at rate of £100.

Queen Mary's Hospital for the East End, E.—Dental Anæs thetist. £25. Also Res. M.O. £200. And Cas. O. A rate of £150. Also H.S.'s, and H.P.'s., &c. Each at rat of £120.

Redhill, East Surrey Hospital.—Pathologist.

Royal Chest Hospital, City-road, E.C.—Clinical Assts.

Royal Free Hospital, &c., Gray's Inn-road, W.C.—Bacteriologis and Lecturer in Bacteriology. £500. Also Surg. Reg. £200 Also Gynæcological Reg. and Med. Reg. Each £100 Also H.P.'s, H.S.'s, &c.

Royal Northern Hospital, Holloway, N.—Clin. Asst. for V.D Dept.

Royal Society of London, Burlington House, W.—Foulerto Research Studentship. £700.

Royal Westminster Ophthalmic Hospital, Broad-street, W.C.—Clinical Research Scholarship. £100.

Ryde, Royal Isle of Wight County Hospital.—Res. H.S. £180

St. Mark's Hospital for Cancer, &c., City-road, E.C.—Res Surg. O. At rate of £150.

St. Peter's Hospital for Stone, &c., Henrietta-street, W.C.—Clinical Assts.

Salford Royal Hospital.—Res. Surg. O. £200. Also two H.S.'s Each at rate of £125.

Sheffield, Jessop Hospital for Women.—H.S. for Maternity Dept At rate of £120. Also two H.S.'s. Each at rate of £100.

Sheffield, Royal Infirmary.—Asst. Aural and Ophth. H.S. At rate of £80.

Southampton, Royal South Hants and Southampton Hospital.—H.P., Two H.S.'s, Cas. O., and Res. Anæsthetist. Each at rate of £150.

Stoke-on-Trent, Longton Hospital.—H.S. £160.

Surrey County Council.—Two Asst. M.O.'s. Each £600.

Throat, Nose and Ear Hospital, Golden-square, W.—H.S. £100.

Wells Mental Hospital, Somerset.—Asst. M.O. £350.

West London Hospital, Hammersmith-road, W.—H.P. and Two H.S.'s. Each at rate of £100.

Westminster Hospital, Broad Sanctuary, S.W.—Office of Physician for Diseases of the Skin.

Wimbledon Hospital, S.W.—H.S. At rate of £105.

Wolverhampton Royal Hospital.—Surg. Reg. and Res. Asst. Surg. £250.

Worcester Royal Infirmary.—Sen. H.S. £180.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Whittlesey (Cambridge).

In the advertisement for a *District Obstetric Assistant* for the Royal Free Hospital, Gray's Inn-road, W.C.1, in our last issue, the salary was stated to be £1000; the figure should have been £100.

Births, Marriages, and Deaths

BIRTHS

CORNER.—On Nov. 13th, at Second-avenue, Hove, the wife of Dr. William Corner, of a son.

COWAN.—On Nov. 13th, at Radnor-place, W., the wife of Dr. H. A. Cowan, of a daughter.

DICKSON.—On Nov. 11th, at Edinburgh, the wife of Flight-Lieut. Alexander Dickson, F.R.C.S. Edin., R.A.F. Medical Service, of a daughter.

HALLEY.—On Nov. 18th, at New Mile House, Ascot, the wife of Dr. G. Stiven Halley, of a daughter.

LAW.—On Nov. 14th, at Devonshire-place, the wife of Frank W. Law, F.R.C.S., of a son.

RUTHERFORD.—On Nov. 19th, at The Meads, Cowley, Middlesex, the wife of R. Rutherford, F.R.C.S., of a son.

DEATHS

BOULGER.—On Nov. 14th, at Ewell, Elm-road, Worthing, Lieut.-Colonel Isaac Boulger, R.A.M.C., retd.

BOLTON.—On Nov. 16th, at a nursing-home, George Augustus Bolton, M.B., B.Ch., aged 75.

LEWIS.—On Nov. 13th, at a nursing-home in London, Frank Charles Lewis, M.D., M.R.C.S., L.R.C.P., B.S., D.P.H., aged 58.

O'HALLORAN.—On Nov. 19th, at Folkestone, Colonel Michael O'Halloran, late R.A.M.C.

PARKE.—On Nov. 14th, at Blake House, Tideswell, Buxton, Thomas Henry Parke, M.R.C.S., L.R.C.P., L.S.A., J.P., aged 76.

PURDIE.—On Nov. 18th, Dr. Robert Purdie, M.B., C.M., of Haverstock-hill, N.W., in his 81st year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE DISRUPTION OF FAMILY LIFE IN SOVIET RUSSIA

THERE are many strange things in Russia, and one of the strangest is the complete change which seems to have overtaken not only the position of women but the whole outlook of the people towards marriage, children, and home life. To uproot the age-old institution of the family is, no doubt, quite as difficult as to uproot the idea of private property and personal gain; and no one can foretell what the ultimate results of either uprooting may be.

A book recently published[1] purports to give the first comprehensive account of the new sexual ethic of the U.S.S.R. and, though it is confused and curiously blurred, it does certainly reveal a number of remarkable things which it would be interesting to understand more clearly. It is a maxim of the Russian revolution, apparently, that women are no longer to be "the better half" of men, but are to be whole human beings on their own account. They are encouraged, and indeed obliged, to be fully self-supporting, and one-third of the whole labour force in Russia to-day is women, who are employed in every kind of work quite indiscriminately and paid on exactly the same basis as men. Thirty-six million women, however, have not yet been drawn into the new way of life and are still housewives; but as fast as may be they are being transformed, and communes and large coöperative dwellings are taking the places of the small individual homes.

Combined with this process there goes a new and very serious insistence upon the proper care of small children. Instead of leaving them to their parents, every kind of State agency exists for feeding, for educating, and for training the future citizens. The mother can, if she chooses, hand the child over entirely to the State; but it seems that more often she does not do this, but avails herself of the clinics, the feeding centres, and the communal nurseries or kindergartens which simplify her task. There is in this book a most curious photograph of a mother's "Milk Centre," which shows rows of young women giving the breast not to their babies but to bottles; and it is one of the disappointments of the text that no explanation of this picture is provided. Much explanation is, however, given of the welfare and medical care which is available for expectant mothers and for infants, and it is quite clear that the Soviet Government is anxious that the break-up of individual families shall result in healthier conditions and more skilled care for children than the old system has in fact anywhere provided.

The problem of the nurture of the children, however, is only a part of the problems associated with the disruption of family life. There remains the question of the sex relations of adults. On this point the book is obscure. For some years after the revolution, the author explains, romantic love was entirely banned. Young people entered upon sexual relations in as casual a spirit as they drank a glass of water, and it was considered "bourgeois" to do anything else. Now a change is taking place, and although romantic love is as much despised as ever, a new form of serious comradeship is taking its place. Monogamy, the author thinks, is holding its own, or is about to hold its own, all the more securely for the complete freedom of divorce and the complete independence of women which prevail. The available statistics do not lend much support to this view as yet. Registered marriages, "factual" marriages, and casual unions seem to come and go with great rapidity, and the appalling housing shortage adds to the confusion. If a man or a woman succeeds in getting a room to himself or herself it seems only decent to ask someone to share it; but if the resulting marriage is dissolved in a month or a year it often happens that no other room can be found, and the couple have to go on living together.

Perhaps the most interesting section of this book, and certainly the most explicit, is that dealing with childbirth. As everyone knows abortion is not illegal in Russia, and birth control is officially encouraged and taught most carefully in the welfare centres. In spite of this, or, as the author asserts, because of it, the birth-rate in Russia is exceptionally high; the young women are eager to have children. It is considered the right thing not to interfere with the birth of the first child, and except in special circumstances operations for abortion are not performed in first pregnancies. Leave of absence from work is given for abortion as for childbirth, and the operation is described as simple and almost uniformly successful.

All this makes queer reading from the standpoint of such a civilisation as ours. From this standpoint there is much that is quite incomprehensible and much that is actually repulsive, but that this gigantic experiment is worth watching carefully will hardly be denied by anyone interested in sociological developments, however strongly he may disapprove of the direction it is taking.

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[1] Women in Soviet Russia. By Fannina Halle. London: George Routledge and Sons, Ltd. 1933. Pp. 409. 18*s.*

HEART BURIAL

Mr. C. A. Bradford, a learned antiquary, has devoted much research to heart burial, and has produced as a result of his labours a work on this curious subject, with special reference to the London area.[1] The cases recorded are doubly indexed according to name and place of interment. Mr. Bradford has come to the conclusion that heart burial was but an offshoot of the practice of evisceration at death, which has been in vogue from the later Stone Age, and was practised by the Egyptians with a highly developed ceremonial, special prominence being given to the heart. The early Christians at first regarded the mutilation of the body with disfavour, but later, when their churches were built over the tombs of martyrs and much importance was attached to relics, churches became the place of interment for persons of consequence who wished it, and for those whose bodies or hearts the clergy considered desirable possessions. For these reasons, and also no doubt because of the long interval elapsing in earlier times between the death of important persons and their interment, evisceration and embalmment were desirable on sanitary grounds.

The fees received by embalmers seem to have risen progressively. Thus in 1625 King James's chirurgeon, William Walker, received a gift of £50 for his attendance, pains, and assistance in embalming his royal master's body. The surgeon who embalmed the heart of the gallant Marquis of Montrose, executed at Edinburgh in 1650, received £25, which included the cost of spices. At the death of Charles II. the royal apothecaries received £212 8*s.*, but the two surgeons only got £100 between them. For embalming the body of Queen Mary II. who died of small-pox Dr. Harel received £200. For performing the "customary funeral rites" on the body of George II. no less a sum than £432 13*s.* was paid to the royal surgeons and apothecaries.

Possibly evisceration was favoured by some as a precaution against premature burial. It is said, for instance, that Henry, Earl of Cumberland, who died in 1569, was so much affected at the death of his wife that he swooned away and lay as dead. He did not revive till his attendants, who supposed that life had actually departed, were making arrangements for embalming the body. On the other hand, a great lady who died in 1635 gave these directions in her will. "My body to be shrouded and chested without ripping, imbalming or spicery and buried in Our Lady's church at Salisbury near my late husband." Others also left express directions in their wills against the practice. Perhaps the most famous instance of heart burial is that of Robert the Bruce, King of Scotland, who desired his heart to be taken to the Holy Land by Douglas, and then brought back to Melrose for interment. Apparently it got no further than Spain. Mr. Bradford thinks that it may have been brought back to Melrose, where two leaden caskets were discovered by the Office of Works in 1921; but there was nothing to indicate whose hearts they had contained.

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[1] Heart Burial. By Charles Angell Bradford, F.S.A. London: George Allen and Unwin. 1933. Pp. 256. 8*s.* 6*d.*

GIVING THE DONOR HIS DUE

MEMBERS of the British Red Cross Society's blood transfusion service deserve both thanks and considerate treatment, not because it is an act of heroism to part with a pint or so of blood, but because they have undertaken a tiresome and altruistic job for the community. They have consented to suffer interruption in the middle of work or play, to make a journey, possibly inconvenient, to hospital, and to submit to an operation which, if it cannot be called painful, is certainly disagreeable: and all for the sake of someone they have never seen before and may never see again. Not unnaturally they want to know how the recipient gets on, and the merest courtesy should ensure that they receive a report through the headquarters of their service. Yet in the *Quarterly Circular*, issued to the service for the first time in October of this year, there is evidence that such reports are often delayed and sometimes extracted only by a threat to withhold donors in future. This reflects unfavourably on the manners of our profession, and can scarcely help to maintain the supply of donors.

It must not be supposed, however, that a complaining note has been sounded in the circular itself; on the contrary, it is written in a most coöperative spirit. Its purpose is to bring the scattered members of the service into closer touch with each other. Cohesion has not been too good in the past, for even a common generosity in blood giving has not proved a strong enough bond between donors to make social gatherings, such as dances, a complete success. The circular will supply notes of interest, statistical returns, reports of cases, and answers to technical questions raised by members. It is noteworthy that no appeal is ever made to a donor to reconsider a decision to resign; both the decision and the reasons for it are regarded as his personal concern. A good many members drop out in the course of time, but numbers go on performing this useful service for years. The record of the London service is held by an assistant scout-master at Hackney, who has given blood on 51 occasions, but we still fall far behind the world record, held by a Frenchman, who has supplied 109 quarts of blood to a series of 459 patients.

LINGFORD'S LIVER SALT

WE reported upon this preparation put on the market by Messrs. Joseph Lingford and Son, of Bishop Auckland, in THE LANCET of Feb. 18th, 1933, describing it as a well-balanced medicinal salt, of which the composition was :—

Magnesium sulphate ..	.. 21·1 per cent.
Sugar	.. 28·0 ,, ,,
Sodium bicarbonate	.. 26·0 ,, ,,
Tartaric acid ..	.. 23·5 ,, ,,

We have heard recently from the manufacturers that they have added calcium iodide to the preparation, at the same time making certain improvements in the methods of packing. The addition of the calcium iodide is very small, and could not therefore make any difference in the keeping properties of the preparation. The known efficacy of calcium in certain conditions of deficiency makes the addition a logical one, but in dealing with so minute a quantity analyst will state with any certainty that chang in nutrition would follow. This is a point whi can only be settled in one of two ways, or in bo ways. A series of biological experiments of t usual description might be undertaken, when inves gation of altered conditions between the anim experimented upon and the controls might be detecte Secondly, the actual users of the preparation mig be able to report upon benefits derived, having th opinions supported by medical men. The preparati is both a pleasant and a useful one, and the additi made to it cannot detract from its present qualiti and may enhance the therapeutic value.

INTER-LIBRARY LOANS

LAST year the library of the London School Hygiene and Tropical Medicine lent 514 books to other libraries. From the National Central Libra came 279 requests, to 121 of which it proved possib to respond. This gained the Keppel-street library place among those "which have been speciall generous in lending books" to the central librar Mr. C. C. Barnard, the librarian, remarks in h report: "If any purely mercenary justification f this 'generosity' be needed we have it in the fa that our borrowings from other libraries are great even than our loans, amounting to 697 books from 3 libraries. If we exclude from our reckoning th Science Library and Lewis's circulating library whic do not borrow, over 82 per cent. of our borrowing are from libraries to which we have also lent, so tha the reciprocal nature of the service is obvious. Thi department of the library's work occupies a conside able part of the time of two members of the staff although its direct monetary cost is less than £10 year. I am, however, quite satisfied that it i well worth while, and am strengthened in thi conviction by the statements of several member of the teaching and research staff of the school who declare it to be by far the most valuable benefi they derive from the library."

EXHAUST GAS DETOXIFIED

WHEN petrol is burnt in oxygen, carbon dioxide and water are the final products and heat is evolved. But in applying this well-known chemical action to the propulsion of a motor-car, it has so far proved impossible to invent a carburettor which can be adjusted so that the breakdown of the fuel is completed under all atmospheric conditions and at all speeds. If, for example, insufficient oxygen is present all the carbon will not be oxidised as far as carbon dioxide, and some will be expelled from the exhaust pipe as the less agreeable monoxide. The proportion of carbon monoxide present is highest when the engine is running and the car is travelling slowly or is stationary; these conditions are fulfilled when the car is moving slowly in crowded streets, is crawling in a traffic jam, or is running in the garage. It is unfortunate that these are also the times wher many people are likely to come into contact, eithe wittingly or unwittingly, with the gases which it emits.

In the *Manchester Guardian* of Nov. 15th a correspondent describes the work of Mr. John Harger, of the department of metallurgy in the University of Liverpool, who has discovered a catalyst by means of which the oxidation of carbon monoxide takes place so fast that it is completed before the gas leaves the exhaust pipe. No expensive alterations or modification of machinery are involved. All that is needed is the fitting of a new exhaust box containing the catalytic agent. The name of this substanc is bauxite; it is a hydrated oxide of aluminium which takes its name from a village called Le Beaux or Les Baux, near Arles, where it wa first found, and which in this country is no mined in Co. Antrim. It is used in the manufactur of aluminium.

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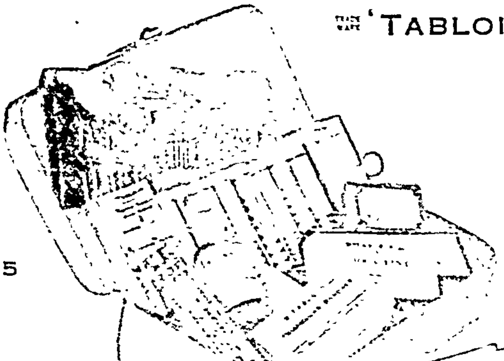
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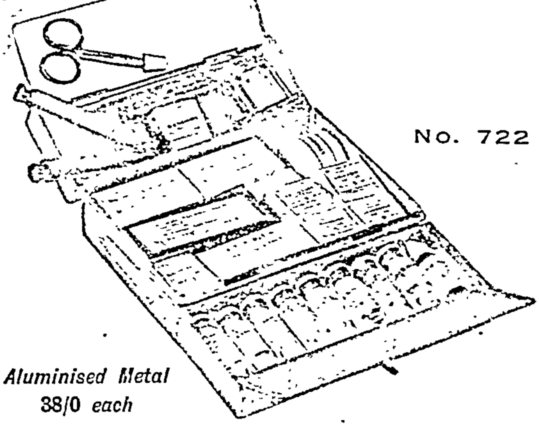
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See also pp. 29, 30 & 31

ADDRESSES AND ORIGINAL ARTICLES

ARTERIAL DISEASE OF THE EXTREMITIES[*]

BY A. DICKSON WRIGHT, M.S. Lond., F.R.C.S. Eng.
ASSISTANT SURGEON TO ST. MARY'S HOSPITAL AND TO THE PRINCE OF WALES'S HOSPITAL, LONDON

THE subject of arterial disease of the extremities seems to attract much more attention now than it ever did before and it is possible that this type of disease is on the increase. There has been also a greater tendency for these diseases to become surgical in other respects than in the removing of the dead limb after the circulation has failed completely.

I do not intend to discuss the question of simple aneurysms of the extremities; they are of rare occurrence and their treatment is straightforward.

Arteriovenous aneurysms are of two types, congenital and acquired. In the former type there are multitudinous arteriovenous connexions with a swollen blue cold limb, sometimes longer and sometimes shorter than its fellow from over- or undernutrition. The limb is usually diagnosed as being the seat of a diffuse angioma, and the only treatment consists in the excision of the larger superficial venous trunks. In acquired cases due to simultaneous trauma of contiguous artery and vein a very characteristic syndrome ensues in which the lower part of the leg shows all the usual changes which follow upon long-standing varicose veins, together with great swelling of the leg and progressive deterioration of the circulation of the extremity owing to the blood being short-circuited into the venous circulation. The heart in time is seriously affected and becomes hypertrophied and dilated owing to the rapid venous return; and it is interesting that one of the greatest observers of all time, to wit Osler, should have forbidden operation on all his patients with this condition because they had enlarged hearts, not realising that the cure of the heart condition lay in treating the aneurysm. The treatment is quadruple ligation of artery and vein above and below the connexion or excision of the connecting channel. Proximal arterial ligation amounts to malpraxis, because gangrene always follows.

Arterial embolism of the extremities is a most important condition to diagnose immediately. If it is diagnosed quickly there is a 50 per cent. chance of saving the limb; it is the most urgent of all emergencies because with every minute wasted recedes the chance of success. It occurs in patients with auricular fibrillation and such cardiac stagnation that clots form in the heart. The syndrome of sudden agonising pain in the limb followed by cadaveric paleness and lividity with a sharp line of demarcation is so characteristic that once seen it is never forgotten. The clot always straddles an arterial bifurcation and is located by the signs or by radiographic visualisation of the arteries by injection of radio-opaque fluid. The treatment consists in incising the artery and withdrawing the clot and then suturing the artery with vaselined silk. Occasionally excision of the portion of the artery containing the clot is done.

The *diseases which reduce the arterial calibre* may be divided into two main classes:—

1. Those due to vasomotor neurosis—diseases of women and the upper limbs.
2. Those due to the formation of inflammatory or other deposits in the arterial coats—diseases of men and the lower limbs.

It is important to realise that in both types arterial thrombosis is liable to occur and produce sudden changes for the worse in the clinical picture.

VASOMOTOR NEUROSIS

The classical *Raynaud's disease* is a very definite clinical picture with 90 per cent. of cases occurring in women, usually in the third decade of life. The disease affects the hands more than the feet and is characterised by blanching of the fingers followed by lividity on exposure to cold, with increase in the ischæmia; ulcers and gangrene follow. The treatment consists in careful protection from cold and thorough elimination of the usual septic foci. When really troublesome the disease can be cured with certainty by the operation of ganglionectomy.

Erythromelalgia is the opposite of Raynaud's disease, the fingers becoming hot and red instead of blue and cold. To my knowledge no case of this rare but very distressing complaint has been treated by sympathectomy. The operation would do good in my opinion, because I have noticed a condition of temporary erythromelalgia following ganglionectomy and disappearing in a few days.

Acrocyanosis is a condition frequently found in young women; the forearm, hands, and fingers are blue and swollen all the time, and chilblains are always coming and going. In bad cases there is enough discomfort to justify stellate ganglionectomy which is almost always successful. It is almost certain that in this disease the veins are also affected; there is no reason why they should not have vasomotor nerves.

Erythrocyanosis crurum puellarum frigida is a similar condition occurring in the legs after puberty. This is a disease of the greatest concern to young women and seems to be more common in Scotland than in England. It consists in a blue swelling of the back of the leg and ankle; the skin is "goosy" and the surface very cold. The feet are cold, though not so cold as the legs, and are subject to chilblains. A very constant painful swelling is present over the insertion of the tendo Achillis. The treatment is very unsatisfactory; the painful heel can be relieved by wearing a rubber heel cushion to lift the heel out of the shoe. Elastic stockings of the Lastex type are useful. No ganglionectomies have been recorded for this disease, but much more unjustifiable operations have been done such as excising the bump over the heel for comfort and removing slices of the fat of the leg for appearance. This syndrome is present also in Bazin's disease, which is probably a form of this disease severe enough to produce ischæmic ulcers, just as in severe Raynaud's disease ulcers occur on the fingers. The association of tuberculous manifestations in other parts of the body does not mean that the ulcers of Bazin's disease are tuberculous, and the fact that the ulcers heal in the summer and recur in the winter is against such an origin. In old cases of infantile paralysis the same syndrome is constantly present in the affected leg, and ulcers are very common. The ulcers in both diseases appear on the posterior surface of the lower half of the leg where the coldness and swelling are most marked.

Pneumatic hammer disease is a form of Raynaud's disease affecting the left hand in right-handed and the right hand in left-handed labourers working on road excavations and the like. Gangrene never occurs but there is a good deal of pain and disability.

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[*] Lecture delivered at a post-graduate course at St. Mary's Hospital.

Cervical ribs occasionally press upon a vasomotor nerve coming up from the first or second dorsal ganglion to join the first dorsal nerve. The index is the finger most affected and often gangrene ensues. Treatment consists in removing the offending rib.

Crutch pressure sometimes causes a similar train of symptoms.

Sclerodactyly is a sclerodermatous condition affecting the fingers and it is nearly always associated with symptoms of Raynaud's disease. The sympathetic seems to be responsible for so many skin functions by its vasomotor, pilomotor, sweat, and sebaceous secretomotor supply that it is reasonable to suppose that it is responsible in some way for the suppleness of the skin. Ganglionectomy is of great value in this disease and it should be done in the early stages.

ORGANIC OBSTRUCTION OF THE ARTERIES

Buerger's disease or *endarteritis* or *thrombo-angiitis obliterans* is one of the greatest importance. Confined almost exclusively to men in the fourth and fifth decades, it occurs most commonly in Eshkinazi Jews and heavy smokers, and is an inflammatory disease affecting both arteries and veins. The legs are most affected.

The symptoms may be summarised as follows: (1) Claudication in calves or small muscles of the foot. The latter symptom is generally treated at first as due to pes planus. (2) Ulcers of toes, especially of the bed of the great toe-nail (ingrowing toe-nail). These ulcers give excruciating pain. (3) Superficial phlebitis occurs in half the cases. Microscopy of an excised vein makes the diagnosis certain because the pathology is so characteristic. (4) Postural colour changes in the feet, purple when dependent, white when elevated is the classical test. The angle from the horizontal at which the feet have a normal pink colour is the "angle of circulatory efficiency." These postural changes do not occur in Raynaud's disease. (5) Disappearance of the pulses at the ankle and even popliteal space is frequent. The wrist pulses may also disappear. Sometimes the ulnar pulse is hard to feel, and blockage of the ulnar artery can be inferred if after blanching the palms by clenching the fist the colour does not return when the radial is compressed. (6) Sudden gangrene of toes develops and is generally of the dry type and is due to thrombosis of vessels.

Various diagnostic tests are of value:—

1. Oscillometric readings are very useful. I use Pachon's instrument and frequently calibrate it on my own leg.
2. Skin temperatures are of great value, and it is quite accurate enough to do them with skin thermometers of simple type. The elaborate thermo-couple apparatus is not necessary.
3. Cohen's test is based on the increased rapidity of absorption of an intradermal saline weal in this condition.
4. Intradermal injection of 0·1 c.cm. of 1/1000 histamine (ergamine acid phosphate) does not produce the characteristic weal and flare when the circulation is inadequate.
5. Arteriography may be carried out.

Treatment is very difficult and calls for much judgment because the cases vary in severity and rapidity of progress and the disease often comes to a standstill. I would place first of all the elimination of apical abscesses or other foci. This is left out of most articles on treatment but I have had the most dramatic improvements in three cases by removing bad teeth. The patient must stop all smoking and discontinue the use of rye bread in all forms. He must wear the warmest and dryest of footwear with cork and felt insoles and rubber soles and even sheepskin boots. Careful powdering of feet and meticulous chiropody are required. Hot-water bottles and bed-socks and short extra eiderdown for the feet are useful at night, a foot muff should be worn at the desk and when motoring, and rest on the sofa whenever possible is essential.

Buerger's exercises are useful. The patient has three minutes with the feet at 60°, three minutes hanging down and five minutes horizontal with an infra-red lamp. Injections of Padutin also help, especially in cases of claudication. Starting with three injections of 2 c.cm. per day the dose is decreased after 14 days to one injection per day. The patient may give these himself as he would insulin if he had diabetes. Protein shock is sometimes of value and is best produced with typhoid H antigen which causes less discomfort than T.A.B. The use of hypertonic saline intravenously has been suggested by Silbert to lessen the viscosity of the blood: 300 c.cm. of 5 per cent. saline solution is given three times weekly for a monthly course.

The absence of the disease in the female has prompted the use of ovarian extracts.

As regards surgical treatment the value of lumbar sympathectomy is much disputed. It cannot open up vessels blocked with inflammatory products; it can only ensure that the collateral circulation does its best, but it is possible that the operation may thus stay the march of the disease in some cases. The benefit to be obtained from the operation can be gauged by temporarily paralysing the sympathetic with spinal anæsthesia or novocain injection of the lumbar ganglia. Brown's vasomotor index is the difference between the rise in skin and mouth temperature divided by rise in mouth temperature produced by protein fever. An index of more than 1·5 is said to justify sympathectomy.

Division or alcohol injection of the cutaneous nerve-supply may be required for painful ulcers. The pain of these ulcers is excruciating and they will often heal only when rendered anæsthetic and treated by strapping. Amputations of toes and extremity and alcohol injections of the lumbar ganglia are other surgical measures which may become necessary.

Ergot gangrene or St. Anthony's fire is probably akin to Buerger's disease.

Traumatic endarteritis seems to be the main cause of that puzzling disease known as traumatic œdema of the back of the hand, the *Handdrucködem* of German and Secretan's disease of French authors. This is a disease of great medico-legal importance—a crush of hand or foot results in cold, painful swollen hand which never seems to get well. A similar condition develops in the fingers from cat, dog, or human bites. Ganglionectomy may be of value in severe cases of *Handdrucködem*.

Diabetic endarteritis is an extremely important form of arterial disease. The maintenance of a fairly normal blood-sugar by insulin and diet must help to prevent the insidious development of this disease.

Mönckeberg's disease or *arterio-sclerosis obliterans* is the disease of the old. The media is the seat of fibrosis and calcification. The thickening of the media and its loss in elasticity narrows the arterial lumen, and then finally comes thrombosis in the narrowed vessel and gangrene supervenes. For these unhappy cases careful management as outlined in Buerger's disease is prescribed. Padutin may be injected. Alcohol by mouth is of great value in reducing claudication and ischæmic pain. The only surgical treatment suggested is amputation for gangrene and occasionally section of a nerve to a painful ulcer.

Syphilitic arteritis must always be borne in mind. It rarely affects the extremities, but a Wassermann reaction should be part of the routine investigation of all cases of arterial disease, even Raynaud's disease, which when associated with paroxysmal hæmoglobinuria is said to have a syphilitic origin.

—	Part affected.	Sex.	Age.	Vasomotor index.	Claudication.	Postural colour change	Ulcers and gangrene.	Arterial oscillations.	Ganglionectomy.
Raynaud ..	Fgrs.	F.	20–40	H.	0	0	+	H.	Good.
Acrocyanosis	Hands & fgrs.	F.	15–40	H.	0	0	0	H.	„
Pneumatic hammer disease	Right hand.	M.	20–50	H.	0	0	0	H.	Not necessary.
E.C.P.F. ..	Legs.	F.	15–40	H.	0	0	0	Md.	Good.
Bazin.. ..	„	F.	15–40	H.	0	0	+	Md.	„
Infantile paralysis	„	M. F.	14–50	Md.	0	0	+	L.	Moderate.
Sclerodactyly	Fgrs.	F.	20–40	Md.	0	0	+	H.	„
Buerger ..	Feet & toes.	M.	20–50	L.	+	+	+	L.	„
Secretan ..	Back of hand	M.	20–50	Md.	0	+	UO	H.	Good.
Mönckeberg	Feet.	M.	60–80	L.	+	+	+	L.	Not ind.

Fgrs. = fingers ; H. = high ; Md. = medium ; L. = low ; Ind. = indicated : UO = ulcers occasionally ; E.C.P.F. = erythrocyanosis crurum puellarum frigida.

The accompanying Table shows for purposes of comparison the principal features of the disorders I have described.

ACETYLCHOLINE IN PARALYTIC ILEUS

By A. Lawrence Abel, M.S. Lond., F.R.C.S. Eng.

SURGEON TO THE PRINCESS BEATRICE HOSPITAL AND TO THE GORDON HOSPITAL FOR RECTAL DISEASES ; ASSISTANT SURGEON TO THE CANCER HOSPITAL AND TO THE WOOLWICH MEMORIAL HOSPITAL

The manner in which a patient's intestinal peristalsis will be affected after an abdominal operation is one of the most important of the unknown factors which materially affect not only the comfort, but sometimes even the life, of the patient.

If, after operation, the intestinal mechanism could be surely restored to normal, if so-called gas pains could be abolished, if all abdominal distension could be eliminated, and paralytic ileus prevented, or invariably cured immediately it made its appearance —then a very great advance in abdominal surgery would have been made. Even after the administration of an anæsthetic and the performance of an extra-abdominal operation, but especially after an abdominal laparotomy, individual patients vary enormously with regard to their intestinal behaviour. I know of no more trying complication, from the patient's point of view, than gas pains, or of one which provides a more anxious time for the surgeon than a case of paralytic ileus—a complication which still confronts us in a most dramatic manner, not only in patients whose pathological states make its advent likely, but sometimes in the most unexpected cases.

As a result of my experiences with choline and acetylcholine for seven years I feel that in these drugs, which are biochemical substances normally present in the intestines and probably in all tissues, we have potent aids in combating intestinal irregularities. My thesis is as follows :—

(1) Acetylcholine is essential for intestinal peristalsis.

(2) Factors which produce paresis or paralysis of the intestine do so either by (*a*) a diminution of the intestinal content of acetylcholine or by (*b*) increasing the threshold of the nerve-impulse, thus rendering the normal quantity of acetylcholine insufficient.

(3) *The administration of acetylcholine is, therefore, the correct treatment for these conditions.*

Factors Affecting Intestinal Peristalsis

(*a*) ANATOMICAL CONSIDERATIONS

The first neurone includes the nerve-cells in the vagal motor nuclei of the brain (nucleus ambiguus and nucleus dorsalis) and the axon or peripheral nerve-fibre to the intestinal wall. The second neurone is in the actual organ innervated, and constitutes Auerbach's plexus in the intestinal wall. That is to say, as far as the intestines are concerned, the parasympathetic fibres of the vagus (and in the lower part of the large intestine of the sacral parasympathetics) end in the intestinal wall. There these ends lie in close relationship to the dendrons of the Auerbach's cells. But there is a definite space between these two which we may call the *interneurone space.* The axons from Auerbach's cells end on the surface of the unstriped muscle-fibres.

Rendle Short[1] states that the cells of Auerbach's plexus are large isolated polygonal nerve-cells closely packed round with small ovoid cells. (*These ovoid cells may be regarded as the terminations of the axons of Auerbach's cells.*) He further states that these ovoid cells of the ganglia show myoneural junctions where they pass into direct continuity with the unstriped muscle-fibres. Sharpey-Schafer[2] states that "the amyelinated fibres (of the parasympathetic) end in ganglionated plexuses in the wall of the intestine—i.e., a primary plexus, with ganglion cells in abundance. From these cells fibres pass to form secondary plexuses and ultimately end in ramifications among the contractile fibre cells to the surface of which the slightly enlarged ends of the branches are applied."

From the point of view of the interneurone space described, between the first upper and second lower neurone, these two accounts are quite different. By that I mean that one states that the fibres pass into direct continuity with, and the other that they are applied to the surface of, the muscle-fibre cells. The latter allows of a potential myoneural space.

An interneurone space is definitely known to exist. A myoneural space is at present a surmise. Both regions are of importance when we consider the effect of certain drugs, especially acetylcholine, upon the peristalsis of the intestines.

In considering, therefore, the vagal and sacral parasympathetic intestinal innervation we have :—

1. The upper neurone (vagus and sacral parasympathetic nerves).
2. The interneurone space (in the bowel wall).
3. The lower neurone (Auerbach's plexus).
4. Possibly a myoneural space.
5. The unstriped muscle-fibres.

Given these histo-anatomical details, a number of questions arise. For example, is the space mentioned in No. 2 and No. 4 above really a space, or is it a connecting link ? We know that No. 2 is a link because impulses pass from 1 to 3. Is this link chemical or physical ? Apparently it is not physical, for histological methods have failed to reveal it. Is this chemical link then, an acetylcholine-like substance as Samson Wright[3] suggests ? Or is it a substance which we may call acetylcholinogen ; or is it simply that acetylcholine, or choline with acetic acid, must be present for Auerbach's plexus to function ? Or does acetylcholine itself, or an acetylcholine-like substance translate impulses from Auerbach's ovoid nerve bodies to the muscle-fibres ?

(*b*) PHYSIOLOGICAL CONSIDERATIONS

Normal peristalsis is due to coördinated reflex actions between the neurones which take part in the lower system (Auerbach's plexus). It is independent of the upper neurone, as is shown by the fact that it continues after section of the vagus. There must therefore be some stimulus other than a central one. The centres for the reflex are are situated in the ganglion cells of Auerbach's plexus.

Langley [4] states that the enteric nervous system differs from the parasympathetic nervous system proper because the cells of the former (i.e., Auerbach's plexus) possess reflex and automatic functions which other peripheral nerve-cells do not possess. It is upon this property that the myenteric reflexes depend—that is to say, the relaxation of the gut below the point of stimulation, and contraction above, which process travelling along the circular muscle-fibre as a wave constitutes peristalsis. This movement is abolished by cocaine or nicotine. The control of the circular muscle coat is vested in Auerbach's plexus, and its action is abolished by cocaine or nicotine. The control of the longitudinal muscle coat (which produces the "pendulum" movements of the intestine) is said to be myogenic, and is propagated from one muscle-fibre to another. This movement is not abolished by cocaine or nicotine.

Complete normal peristalsis is maintained by a number of factors, including: (1) the presence of food in the gut; (2) impulses from the upper part of the alimentary canal (i.e., the ingestion of food); (3) products produced during the course of digestion, for example, amino-acids. These factors are sufficiently well known not to need emphasising here.

(4) *Bile (in the large intestine only).*

There seems to be considerable evidence to support the view that it is not the bile salts, as such, which stimulate peristalsis in the large intestine, but that bile is decomposed into glycerol, phosphoric acid, and choline, and keeps a constant quantity of the latter always available for the formation of acetylcholine, and the maintenance therefore of normal peristalsis.

(5) Autonomic nerve-supply. A normal proportion between sympathetic and parasympathetic stimulation of the organism as a whole; that is to say, the correct proportion of rest on the one hand, and of work and worry on the other hand, in an ordinary day.

In addition to parasympathetic nerve-supply the whole alimentary canal is also supplied by sympathetic fibres, stimulation of which produces exactly the opposite effect to stimulation of the parasympathetic nerves. Peristalsis is inhibited, and the sphincters remain contracted. In the course of a normal physiological day the action of neither the sympathetic nor the parasympathetic can be said to be predominant. Over-stimulation of the sympathetic portion, for example, by worry, grief, or mortal combat, results in an inhibition of peristalsis, and stagnation occurs in some or all sections of the alimentary canal.

(6) Balance of water, chlorides, and carbohydrates in general metabolism. This large subject does not come within the scope of this paper.

(7) Presence of acetylcholine in normal bowel. It would appear from a large number of experiments that acetylcholine must be present in the wall of *the alimentary canal, in order that impulses from the* vagus or from Auerbach's plexus may affect the muscle-fibres. That is to say, it appears that the maintenance of peristalsis of the intestine depends finally upon acetylcholine being present in the wall of the alimentary canal.

The therapeutic effect of choline upon the intestine was pointed out in this country by Wolf and Canney [5] in 1926, when they drew attention to their own results in the treatment of ileus by choline. Insufficient attention appears to have been paid to this important article, to which I have freely referred in citing experiments. The point has been investigated by the following workers:—

Weiland [6] in 1912 observed that when a piece of intestine was allowed to contract in Ringer's solution for some time, the fluid acquired the property of exciting contracti in other pieces of intestine placed in it. The substan causing this effect was isolated as choline.

Further experiments illustrating the physiology acetylcholine may be quoted from Samson Wrigh Repeated *stimulation of a frog's heart containing* Ringe solution produces a chemical substance in the ventri which will inhibit another heart. The same soluti will stimulate contraction of a stomach or pieces of int tine. A similar body can be extracted from a fro heart muscle; if this has been previously subject vagal stimulation the yield is markedly increased. T same is true of mammalian heart muscle. This substan is called "vagus substance," and is very active but ve unstable, and closely resembles, or may be identical wit acetylcholine. At any rate on hydrolysis it becom choline.

Both Reid Hunt [8] and Dale [9] have shown how mu more powerful an agent acetylcholine is than choline.

Klee and Grossmann [10] found that after treati decerebrate cats with choline, stimulation of the symp thetic failed to produce inhibition of the stomach mov ments, and *they reported good results in patients sufferi* from chronic atony of the stomach and intestines, and constipation. Since their experiments were carried o it has been shown, as stated above, that choline unit in the intestinal wall with acetic esters, and produc acetylcholine, and that the results are due to the actio of the acetyl derivative of choline.

It can therefore be said that the effect of acety choline simulates the action of the parasympatheti upon the intestine. But it does more than this, f it still acts upon the intestine when this is entirel cut off from vagus and splanchnic nerves.

Chronaxie time of muscle.—Another factor which h to be considered is the chronaxie time of the muscle-fibr of the intestinal wall. By the chronaxie time of a musc is meant the minimum time taken for double the minimu *effective stimulus to produce a contraction. It is know* that a nerve has a minimum time for an effective stimul and that this does not alter. Muscle-fibres, on the oth hand, have a variable chronaxie time. It would appe probable that under pathological conditions the chronax time of muscles is lengthened. It is definitely known th the chronaxie time of muscles is shortened by adrenali and lengthened by atropin. This is especially true abnormally tired muscles. It is almost certain th acetylcholine affects the chronaxie time of muscle, and recent French paper [11] maintains that acetylcholine ac by shortening the chronaxie time of the paretic muscle which has been lengthened by fatigue and also presumab by the factors producing paresis. It therefore appear certain that not only is acetylcholine essential for th transmission of the peristaltic impulse, but that th muscle-fibres themselves contract more readily and mor quickly in the presence of acetylcholine.

Acetylcholinæmia.—Considerable work has been don on the subject of the presence of acetylcholine in the blood Dale doubts the presence of acetylcholine in the blood, bu Kapfhammer and Bischoff [12] maintain that it is present Page and Schmidt [13] say it is present in the serum, spleen and liver, but whether it is in the form of lecithin or actuall as acetylcholine in the two latter, is doubtful. Dale suggest that acetylcholine is present in the blood corpuscles Some workers have *found as much as 28 g. of acetyl*choline in each litre of blood. If this is true, why should such a small therapeutic dose affect the patient? Dal believes that the corpuscles are broken down by the live and spleen, in fact by the whole reticulo-endothelia system and give rise to cholesterol and lecithin in the bile There is, however, no evidence of choline as such in the bile, but bile does contain lecithin, which we know is made up of glycerol plus phosphoric acid plus choline. There is said to be a "mass action balance" between choline and acetylcholine throughout the organism.

The sequence of events in normal peristalsis is probably, therefore, as follows: choline is present in the intestinal wall and the effect of the nerve impulse is to cause a linking of the choline with salts of acetic acid to form the choline ester—i.e., acetylcholine.

The acetylcholine is the connecting chemical link bridging the space between the lower motor neuron and the muscle-fibre, or it is possible that the acetylcholine itself produces the peristaltic effect.

(c) PATHOLOGICAL CONSIDERATIONS

Acetylcholine in abnormal bowel.—Certain abnormal conditions which produce paresis or paralysis of the peristaltic mechanism are associated with a relative or absolute diminution in the acetylcholine content of the bowel wall and are relieved by the administration of this substance. The experimental evidence is as follows :—

Experiments performed by workers in Magnus's laboratory in Utrecht showed that paralysis of the bowel in animals was produced by prolonged administration of chloroform. This paralysis was quickly relieved by the injection of choline hydrochloride. Strong gastro-intestinal movements occurred almost immediately. Magnus concluded that choline acts as the hormone of intestinal movement.[14]

Arai[15] produced peritonitis in cats by intraperitoneal injections of iodine, thus giving rise to any required degree of ileus, depending upon the dose of iodine. This paralysis was overcome by injections of choline. Similarly, typical post-operative ileus was produced by exposure to air and manipulation of the intestines of an animal, and no evacuation occurred for 30 hours unless choline was administered ; when this was done, a normal stool followed very shortly. Again, Arai, using intraperitoneal injections of *Bacillus coli*, united with staphylococci, was able to produce a severe peritonitis in cats, accompanied by intestinal paralysis ; injections of choline cured the ileus. He analysed the intestinal wall in control cases and found that a normal content of choline was present, and concluded that the paralysis resulted from a lessened sensitivity of Auerbach's plexus. It was only when the blood choline was raised above the normal that the nerve plexus responded, giving rise to increased tonus and increased peristalsis.

Further experiments tend to show that stimulation of a posterior nerve-root (i.e., sensory stimulation) causes the liberation of acetylcholine peripherally. For example : (1) if a motor nerve to tongue or limb is divided and allowed to degenerate, an injection of acetylcholine causes a slow contraction of voluntary muscle : (2) stimulation of the chord tympani produces a contraction of the denervated tongue ; (3) stimulation of the peripheral end of the posterior nerve-root produces contraction of the denervated muscles of a hind limb. That is to say, both acetylcholine and posterior root stimulation produce the same effect in the hind limb, namely, vasodilatation and a slow contraction of the denervated muscle.

Relationship to Histamine.—Further experiments have shown that histamine is responsible for the liberation of acetylcholine.

It will be remembered that histamine produces a condition of shock, and is one of the main factors in the production of surgical shock, whether due to accidental injury or to operation. Histamine in man produces dilatation of the arterioles and paralysis of the capillaries. This leads to a fall of blood pressure, because of the failure in venous return. Histamine also increases the permeability of capillaries and allows fluid to escape into the tissue spaces. The volume of the circulating fluid is therefore reduced, and its viscosity increased. It has been shown that chloroform and ether sensitise the capillaries to the action of histamine, whereas no such effect is produced by nitrous oxide. To produce an equivalent fall of blood pressure in a non-anæsthetised patient, or in one anæsthetised solely with nitrous oxide, ten times as much histamine is required as is necessary in a patient anæsthetised by either chloroform or ether. This has a very definite bearing upon the question of the choice of an anæsthetic and its relation to the production of shock, and the degree of shock produced, and to the complications which are likely to occur after an operation, if the viscosity of the blood is increased.

When skin is injured, histamine is liberated. It is probable that when *any* structure is injured, histamine is liberated. Histamine in the tissues stimulates the sensory nerve-endings, and sends impulses along the axon via the posterior nerve-roots, stimulation of which, we have already seen, causes liberation of acetylcholine around the arterioles. Hence Lewis's statement that " nerves produce their effect through the intermediary of *chemical agencies*." For example, if the glowing head of a match is allowed to rest on the skin there is produced, apart from a burn, (1) local liberation of histamine ; (2) stimulation of afferent nerve-fibres ; (3) stimulation of the posterior nerve-root, giving rise to (4) efferent impulse back along the " afferent " nerve, causing (5) liberation of acetylcholine in the region of the original burn, but over a wider area ; (6) dilatation of local arterioles, with resulting (7) blush (flare) over a wider area than the original lesion (axon reflex).

Any operation undoubtedly results in the local production of histamine, which in turn liberates acetylcholine in the tissues where it is then destroyed. The mere performance of a laparotomy, therefore, depletes the acetylcholine content of the bowel wall. The greater the trauma the more acetylcholine is katabolised and the more prone does the patient become to develop ileus. This liability is diminished by nine-tenths by avoidance of chloroform or ether. As far as surgical shock is a factor, the degree of ileus produced depends upon the relative lack of acetylcholine in the intestinal wall. Arai's experiments show that other factors (e.g., peritonitis) still further tend to increase the condition of ileus by diminishing the sensitivity of Auerbach's plexus. A larger concentration of acetylcholine is therefore required to produce peristalsis.

USE OF ACETYLCHOLINE IN PARESIS AND PARALYSIS OF THE INTESTINE

It is outside the scope of this paper to discuss other factors concerned in the production of ileus or to detail the many other methods which are in use for this condition. I have used acetylcholine, often in the most dramatic manner, when all other methods have failed to produce the desired effect. For a moderately severe case, where the complete absence of the passage of flatus or fæces after the first 48–72 hours following a laparotomy indicates paresis or paralysis of the intestine, I give 0·1 g. of acetylcholine by intramuscular injection every two or three hours until flatus or fæces are passed. This usually occurs after the second or third dose. In a more serious case, where complete obstruction has been present for five or six days, I give 0·1 g. at hourly intervals for six doses. For an extremely desperate case I have given 0·6 g. at a single dose with most satisfactory results.

If these measures entirely fail recourse should be had to the performance of an ileostomy or an ileo-ileostomy, but I have not known this necessary since using acetylcholine. Apart from cases which I have operated on myself, most of the cases of paralytic ileus which I have seen have had large quantities of pituitrin, eserine, and morphia, and I avoid these drugs entirely.

Case Histories

The following are illustrative cases.

ILEUS DUE TO PERITONITIS

CASE 1.—Male, aged 8 years. Sent to me by Dr. L. Scher. Three days' history of acute appendicitis. Operation : Oct 2nd, 1931. Gangrenous appendix removed under gas-and-oxygen. Pus from pelvis to just above umbilicus. Free drainage established. Twenty-four hours later abdomen became much distended. Turpentine enema and hot stupes given with no result. Twenty-four hours later the patient began vomiting. Ox-gall enema was given with a small constipated result, but no flatus was passed, and abdomen became rapidly more distended. At 4 P.M. on the second day after the operation 0·05 g. acetylcholine injected intramuscularly every hour for four doses. The bowels were well open about midnight and three times during the night, and the patient made an uninterrupted recovery.

CASE 2.—Male, aged 15 years. Acute appendicitis with lower abdominal peritonitis. Operation: June 13th, 1928. On 14th: condition satisfactory. 15th: patient vomited twice. Abdominal pain and distension marked. Turpentine enema given with small constipated result. 16th: distension worse. Turpentine stupes applied two-hourly: no result. 17th: Turpentine enema: no result. 0·5 c.cm. pituitrin given, followed by olive oil enema: slight result. Vomited twice. 18th: still some abdominal pain, abdomen becoming more distended, patient vomiting all day. 0·5 c.cm. pituitrin given, and rectal wash-out: slight result. 19th: condition much worse. Gastric lavage and simple enema, with very poor result. I first saw this case at the request of my colleague who had operated at 9 P.M. on this day, and ordered 0·1 g. of choline hydrochloride hourly for six doses. The last dose was given at 3 A.M. on 20th; patient's bowels moved *without enema at 5 A.M.*, and again four times during the morning. All vomiting ceased. Thereafter patient gave no further cause for anxiety, and made an uninterrupted recovery.

This case showed the rapid benefit of choline when given even after ileus had been established for six days.

CASE 3.—Male, aged 50. I was called in consultation to this patient by Mr. Jocelyn Swan and Dr. H. Morrison. Had had a gangrenous appendix removed 14 days before with some local peritonitis. Five days later he began to vomit, and the abdomen was reopened, and drainage-tubes reinserted. No real action of the bowels had taken place since the first operation. Repeated enema had been returned with coloured result only, and he had been persistently vomiting for nine days. When I saw him August 22nd, 1932, the patient was moribund, with enormous distension of the abdomen, and had apparently only a few hours to live. For several days he had had repeated intravenous injections of normal saline and glucose, with pituitrin and eserine. *General treatment*: 1000 c.cm. normal saline with 2½ per cent. glucose; coramine, one ampoule hourly for four hours, two-hourly for two days. Local treatment: gastric lavage with normal saline; six gallons were needed before this patient's gastric wash-out was returned clear. Ox-gall enema, 1 oz. ox-gall to 5 oz. of water. Acetylcholine, 0·1 g. hourly for six doses. Antigas gangrene serum subcutaneously, 80 c.cm. After the fourth injection of acetylcholine, this patient had a copious action of the bowels, and within 12 hours the abdomen was quite soft and scaphoid. The bowels were well open night and morning for the following four days, and the patient was apparently perfectly well during this time. I am informed that he then developed signs of a subphrenic abscess, began to cough up a little pus, and two days later died. At no time after the exhibition of acetylcholine did he have any distension or vomiting.

CASE 4.—Female, aged 31. I was called in consultation to see this patient on July 22nd, 1932, by Dr. W. H. Passmore and Dr. J. M. Tait. An acute appendix had been removed eight days previously, and a drainage-tube left in situ for six days. Twenty-four hours before I saw the patient the pulse had gone up to 120, there was absolute constipation and fæcal vomiting, in spite of enemata and the administration of pituitrin and eserine. When I saw her the pulse-rate was 158, temperature 99° F.; the abdomen was extremely distended, with no perceptible intestinal movement. A large mass was palpable in the left iliac fossa—possibly abscess, possibly collapsed intestine. Patient in extremis. Treatment: 1000 c.cm. of normal saline intravenously; 0·1 g. acetylcholine two-hourly for three doses; hot turpentine stupes to the abdomen; turpentine enema. Within six hours the bowels had moved three times, and within eight hours all danger appeared to have been passed, and the mass in the left iliac fossa had disappeared. Next day the patient was perfectly well, bowels opened naturally twice, and the following day the patient was up and walking about, and made an uninterrupted recovery.

This case is typical of at least a score of cases which I have seen in the last three or four years, and which appeared at first to be within a few hours of death, and which have made an uninterrupted recovery, after the use of acetylcholine.

CASE 5.—Male, aged 32. Five days' history of appendicitis, with two days' history of general peritonitis. Admitted to hospital: April 29th, 1931. *Immediate* operation revealed ruptured gangrenous appendix with general peritonitis. Three days after operation abdomen became much distended, and the distension increased in spite of three enemata which had no result. Pulse-rate rose to 120. Patient very seriously ill: 0·1 g. acetylcholine given six-hourly for four doses; bowels well open, and subsequent recovery uneventful.

GENERAL PERITONITIS WITHOUT ILEUS

CASE 6.—Male, aged 24. Acute appendicitis history four days. General peritonitis 48 hours. A very similar case to preceding one, with almost complete general peritonitis, distended and congested intestines. Operation: June 6th, 1932. Appendicectomy and three drainage-tubes. No fluids given by mouth, but interrupted rectal salines given for 36 hours, when acetylcholine was given in doses of 0·1 g. six-hourly. After the second injection the rectal saline began to be returned with a large quantity of flatus and some fæces. After the fourth injection of acetylcholine an enormous rectal result occurred, and the patient then gave no further cause for anxiety, the bowels being quite regular thereafter without further aperient or treatment.

This case is typical of many others in whom all the factors likely to produce paralytic ileus were present and in whom acetylcholine has been used and normal bowel function has followed.

ILEUS FOLLOWING NON-INFECTED LAPAROTOMY

CASE 7.—Male, aged 24 years. Operation for left inguinal hernia and undescended testicle on the morning of July 5th, 1928. On 6th, condition satisfactory. On 7th, complained of great abdominal pain and distension. Turpentine enema given—no result. I first saw this case, at the request of my colleague, Mr. Barrington-Ward, who had operated, in the afternoon when absolute constipation had been present for 56 hours and patient was rapidly becoming very seriously ill. I ordered 0·1 g. choline every four hours for three doses. Last dose was given at 5 A.M. on 8th. Bowels were well open three times during the morning, and patient made an uninterrupted recovery.

CASE 8.—Female, aged 60 years. Operation: Sept. 16th, 1929. Resection anastomosis of transverse colon for malignant disease. No cæcostomy. On 17th: abdomen very distended. Glycerin enema with coloured result *and some flatus. On 18th: abdomen very distended.* 0·5 c.cm. pituitrin 6 P.M., 0·5 c.cm. pituitrin 10 P.M. No result. Frequent vomiting. Large fomentations to abdomen. Glycerin enema: coloured result and some flatus. Abdomen still very distended. On 19th: frequent vomiting. Eserine gr. 1/120 at 1.40 P.M. Treacle enema: small result. On 20th: abdomen very distended. Fomentations still continued. Eserine gr. 1/120 at 11.45 A.M. Still vomiting. Bowels not opened. On 21st: abdomen still very distended. Eserine gr. 1/120 at 3 A.M. No result. At noon I was asked to see this case by my colleague, Mr. Twistington Higgins, who had operated. The patient had extremely advanced paralytic ileus and was in extremis. I ordered 0·1 g. choline every three hours for three doses. The last dose was given at 5.15 P.M. Patient had her bowels open twice during the night and three times the next day. Vomiting stopped, and by 6 A.M. on 23rd abdomen was quite soft and patient made an uninterrupted recovery.

CASE 9.—Female, aged 49. I performed an abdomino-perineal excision of the rectum at the request of Dr. E. V. Dunkley, on Sept. 11th, 1929. After five days of satisfactory progress patient began to vomit, and had a complete cessation of the passage of flatus and fæces via the colostomy. The abdomen became distended, and the pulse began to rise. No result from a turpentine enema in the colostomy. Treatment: gastric lavage and intramuscular injections 0·1 g. acetylcholine every two hours for four doses. After the third dose copious evacuation of flatus and fæces, followed by three days' normal progress, when similar symptoms reappeared. Two doses of acetylcholine were administered, with similar satisfactory results, and thereafter patient made an uninterrupted recovery.

SPASMODIC STENOSIS OF BOWEL

Acetylcholine is also efficacious in relieving spasmodic stenosis of the intestine. The following case is typical of several similar cases treated by this substance:

CASE 10.—Female, aged 15½ years. Operated on for perforated appendix (Nov. 3rd, 1928) with abscess and drainage. Made a normal recovery. Patient readmitted to hospital, Feb. 28th, 1929, with 24 hours' history of colicky abdominal pain, frequent vomiting, and absolute constipation. Temperature, pulse, and respiration normal. Abdomen distended. No other abnormal physical signs detected. Three enemata were administered with no resulting action of the bowels. Twelve hours after admission she was given 0·2 g. of acetylcholine at two-hourly intervals for three doses. The bowels moved twice in the next 12 hours, and the patient had no further alimentary abnormality, and has remained quite well ever since. Subsequent X ray examination failed to reveal any intestinal abnormality.

Had I not known of acetylcholine I should certainly have operated upon this child when the enemata failed to act. In previous similar cases of post-operative adhesions causing acute obstruction, I have frequently found that the obstruction was due to one or very few adhesions causing a spasm of the bowel at the site of adhesion without any actual organic stenosis, and it has always seemed to me that if that spasm could have been overcome for a time long enough for the adhesion or adhesions to be absorbed, no operation would have been necessary.

The acetylcholine in this case would appear to have restored the normal tone of the bowel, to have relieved the spasm, and to have rendered operation unnecessary in this case as it has done in several subsequent cases of a similar nature.

I would, however, not advise its use in this type of case unless the patient is under expert observation in an institution within a few minutes' reach of the operating table, as I feel it is sometimes impossible to differentiate between an organic stenosis and a functional spasm, except that acetylcholine will leave the one unaffected and will relieve the other.

CASE 11.—Female, aged 56. Seen first on April 13th, 1932, in consultation with Dr. L. Scher. Three days' history of absolute constipation and fæculent vomiting. Scar of old appendicectomy with marked distension of abdomen, and marked visible peristalsis. Had had three enemata without result. Treatment: 0·1 g. acetylcholine every hour for four doses, when she passed flatus and fæces freely, and made an uninterrupted recovery.

ACUTE CONSTIPATION

CASE 12.—Male, aged 29 years. Admitted to hospital on Oct. 5th, 1929, as a case of acute intestinal obstruction. There had been absolute constipation for five days. Two enemata given at home had produced no result. There was no vomiting. On admission there were no abnormal physical signs whatever. Three doses of 0·1 g. acetylcholine were injected at six-hourly intervals, and no further treatment was given. The bowels moved slightly after the second injection and several times after the third injection. Since then his bowels have been regular, and a complete X ray examination of his alimentary tract failed to reveal any abnormality. He has been perfectly well ever since, and his doctor informs me that his previous chronic constipation is quite cured.

CASE 13.—Male, aged 21 years. Sent to me by Dr. J. Paxton. Absolute constipation since March 28th, 1930. 29th: mist. alba. ℥i t.d.s. 31st: calomel grs. 5, mist. alba. ℥i t.d.s. April 1st: calomel grs. 5, castor oil ℥i, mist. alba. ℥i t.d.s., and two enemata. 2nd: croton oil ♏ ii, mist. alba. three times a day, liquid paraffin ℥i three-hourly, and two enemata. 3rd: one enema, mist. alba. t.d.s., liquid paraffin as before. I saw this patient on April 4th, with no abnormal physical signs whatever. Treatment: 0·1 g. acetylcholine every two hours for three doses. This was followed by three actions of the bowels which have been perfectly regular since. Subsequent X ray examination failed to reveal any abnormality in the alimentary canal.

CASE 14.—Female, aged 24 years. Seen in consultation with Dr. M. Ravell, Jan. 4th, 1933. History of complete constipation for ten days. During the day had had three vomits, very offensive and semi-fæculent. Large doses of aperients had been given during the preceding three days. Upper abdominal pain and slight distension for 24 hours. No abnormal physical signs detected on clinical examination. I suggested injecting 0·1 g. of acetylcholine every four hours until the bowels began to move. This happened after the second injection, and the patient had three satisfactory actions in the following 12 hours, and has since been perfectly well.

CASE 15.—Male, aged 49. Admitted May 28th, 1931. Two days' history of severe colicky pain in left loin, with absolute constipation. Olive oil and turpentine enemata given without result. On admission distended and tympanitic abdomen. Tenderness over descending colon. No other abnormal signs. Treatment: 0·1 g. acetylcholine hourly for three doses. Immediately after third dose began to pass flatus freely, bowels were well open, and all symptoms disappeared. Five days later X ray examination failed to reveal any abnormality.

CASE 16.—Male, aged 20. Admitted to hospital on May 16th, 1931. Appendicectomy had been performed six months previously. For 24 hours patient had had colicky abdominal pains with vomiting for 12 hours. Clinical examination showed considerable midline distensions with visible peristalsis. X ray examination showed two loops of distended small intestine. In spite of our faith in acetylcholine this patient appeared to need urgent laparotomy for a small gut obstruction. He was given 0·2 g. acetylcholine immediately his clinical examination had been completed, and a similar dose one hour later, just before being put upon the table. On opening his abdomen the site of obstruction was easily seen, and the two ends of a small adhesion which had been causing the obstruction, and which had recently broken, were found. A small fresh clot of blood showed on each torn end. Nothing was done and the patient made an uninterrupted recovery.

ILEUS FOLLOWING OBSTETRIC MANIPULATIONS

CASE 17.—Primipara, aged 27. Difficult delivery of stillborn child Nov. 28th, 1930. On the evening of the 29th abdomen became distended and pulse-rate increased slightly. Visible peristalsis noted. 30th: pituitrin and eserine given in the morning. No result. Pulse-rate increased to 140, temperature 99. Persistent hiccough. High enema given with little flatus result. Dec. 1st: 6 P.M., olive oil enema: no result. Ten P.M. turpentine enema: no result. On the morning of Dec. 2nd I was called in consultation by Dr. J. K. Donald, at which time there had been no bowel movement since Nov. 27th—five days. Patient was then given 0·1 g. acetylcholine hourly for six hours, together with an ox-gall enema, ½ oz. in 4 oz. of water, immediately followed by profuse bowel action. By the morning of Dec. 3rd the abdomen was normal, and thereafter her bowels normally opened.

CASE 18.—I am indebted to my colleague, Dr. Gladys Hill, for permission to publish the following case. Primipara, aged 35. Classical upper segment Cæsarean section early in labour for disproportion. Stovaine spinal anæsthesia with gas-and-oxygen. Operation 10 A.M. Two days later patient's abdomen distended, not relieved by turpentine enema. Three days after operation still distended. No relief from simple enema. Three doses of acetylcholine 0·1 g. given at hourly intervals, with spontaneous action of bowels after third dose. Complete relief of distension and remainder of puerperium uneventful and afebrile.

GENITO-URINARY SURGERY

CASE 19.—Male, aged 65 years. Prostatectomy five days before my opinion was asked. Complete intestinal and three times during the night, and the patient made an uninterrupted recovery.

CASE 2.—Male, aged 15 years. Acute appendicitis with lower abdominal peritonitis. Operation: June 13th, 1928. On 14th: condition satisfactory. 15th: patient vomited twice. Abdominal pain and distension marked. Turpentine enema given with small constipated result. 16th: distension worse. Turpentine stupes applied two-hourly: no result. 17th: Turpentine enema: no result. 0·5 c.cm. pituitrin given, followed by olive oil enema: *slight result. Vomited twice. 18th: still some* abdominal pain, abdomen becoming more distended, patient vomiting all day. 0·5 c.cm. pituitrin given, and rectal wash-out: slight result. 19th: condition much worse. Gastric lavage and simple enema, with very poor result. I first saw this case at the request of my colleague who had operated at 9 P.M. on this day, and ordered 0·1 g. of choline hydrochloride hourly for six doses. The last dose was given at 3 A.M. on 20th; patient's bowels moved without enema at 5 A.M., and again four times during the morning. All vomiting ceased. Thereafter patient gave no further cause for anxiety, and made an uninterrupted recovery.

This case showed the rapid benefit of choline when given even after ileus had been established for six days.

CASE 3.—Male, aged 50. I was called in consultation to this patient by Mr. Jocelyn Swan and Dr. H. Morrison. Had had a gangrenous appendix removed 14 days before with some local peritonitis. Five days later he began to vomit, *and the abdomen* was reopened, and drainage-tubes reinserted. No real action of the bowels had taken place since the first operation. Repeated enema had been returned with coloured result only, and he had been persistently vomiting for nine days. When I saw him August 22nd, 1932, the patient was moribund, with enormous distension of the abdomen, and had apparently only a few hours to live. For several days he had had repeated intravenous injections of normal saline and glucose, with pituitrin and eserine. General treatment: 1000 c.cm. normal saline with 2½ per cent. glucose; coramine, one ampoule hourly for four hours, two-hourly for two days. Local treatment: gastric lavage with normal saline; six gallons were needed before this patient's gastric wash-out was returned clear. Ox-gall enema, 1 oz. ox-gall to 5 oz. of water. Acetylcholine, 0·1 g. hourly for six doses. Antigas gangrene serum subcutaneously, 80 c.cm. After the fourth injection of acetylcholine, this patient had a copious action of the bowels, and within 12 hours the abdomen was quite soft and scaphoid. The bowels were well open night and *morning for the following* four days, and the patient was apparently perfectly well during this time. I am informed that he then developed signs of a subphrenic abscess, began to cough up a little pus, and *two days later died. At no time after* the exhibition of acetylcholine did he have any distension or vomiting.

CASE 4.—Female, aged 31. I was called in consultation to see this patient on July 22nd, 1932, by Dr. W. H. Passmore and Dr. J. M. Tait. An acute appendix had been removed eight days previously, and a drainage-tube left in situ for six days. Twenty-four hours before *I saw the patient* the pulse had gone up to 120, there was absolute constipation and fæcal vomiting, in spite of enemata and the administration of pituitrin and eserine. When I saw her the pulse-rate was 158, temperature 99° F.; the abdomen was extremely distended, with no perceptible intestinal movement. A large mass was palpable in the left iliac fossa—possibly abscess, possibly collapsed intestine. Patient in extremis. Treatment: 1000 c.cm. of normal saline intravenously; *0·1 g.* acetylcholine two-hourly for three doses; hot turpentine stupes to the abdomen; turpentine enema. Within six hours the bowels had moved three times, and within eight hours all danger appeared to have been passed, and the mass in the left iliac fossa had disappeared. Next day the patient was perfectly well, bowels opened naturally twice, and the following day the patient was up and walking about, and made an uninterrupted recovery.

This case is typical of at least a score of cases which I have seen in the last three or four years, and which appeared at first to be within a few hours of death, and which have made an uninterrupted recovery, after the use of acetylcholine.

CASE 5.—Male, aged 32. Five days' history of appendicitis, with two days' history of general peritonitis. Admitted to hospital: April 29th, 1931. Immediate operation revealed ruptured gangrenous appendix with general peritonitis. Three days after operation abdomen became much distended, and the distension increased in spite of three enemata which had no result. Pulse-rate rose to 120. Patient very seriously ill: 0·1 g. acetylcholine given six-hourly for four doses; bowels well open, and subsequent recovery uneventful.

GENERAL PERITONITIS WITHOUT ILEUS

CASE 6.—Male, aged 24. Acute appendicitis history four days. General peritonitis 48 hours. A very similar case to preceding one, with almost complete general peritonitis, distended and congested intestines. Operation: June 6th, 1932. Appendicectomy and three drainage-tubes. No fluids given by mouth, but interrupted rectal salines given for 36 hours, when acetylcholine was given in doses of 0·1 g. six-hourly. After the second injection the rectal saline began to be returned with a large quantity of flatus and some fæces. After the fourth injection of acetylcholine an enormous rectal result occurred, and the patient then gave no further cause for anxiety, the bowels being quite regular thereafter without further aperient or treatment.

This case is typical of many others in whom all the factors likely to produce paralytic ileus were present and in whom acetylcholine has been used and normal bowel function has followed.

ILEUS FOLLOWING NON-INFECTED LAPAROTOMY

CASE 7.—Male, aged 24 years. Operation for left inguinal hernia and undescended testicle on the morning of July 5th, 1928. On 6th, condition satisfactory. On 7th, complained of great abdominal pain and distension. Turpentine enema given—no result. *I first saw this case,* at the request of my colleague, Mr. Barrington-Ward, who had operated, in the afternoon when absolute constipation had been present for 56 hours and patient was rapidly becoming very seriously ill. I ordered 0·1 g. choline every four hours for three doses. Last dose was given at 5 A.M. on 8th. Bowels were well open three times during the *morning, and patient made an uninterrupted recovery.*

CASE 8.—Female, aged 60 years. Operation: Sept. 16th, 1929. Resection anastomosis of transverse colon for malignant disease. No cæcostomy. On 17th: abdomen very distended. Glycerin enema with coloured result and some flatus. On 18th: abdomen very distended. 0·5 c.cm. pituitrin 6 P.M., 0·5 c.cm. pituitrin 10 P.M. No result. *Frequent vomiting. Large fomentations to* abdomen. Glycerin enema: coloured result and some flatus. Abdomen still very distended. On 19th: frequent vomiting. Eserine gr. 1/120 at 1.40 P.M. Treacle enema: small result. On 20th: abdomen very distended. Fomentations still continued. Eserine gr. 1/120 at 11.45 A.M. Still vomiting. *Bowels not opened. On 21st: abdomen still very distended.* Eserine gr. 1/120 at 3 A.M. No result. At noon I was asked to see this case by my colleague, Mr. Twistington Higgins, who had operated. The patient had extremely advanced paralytic ileus and was in extremis. I ordered *0·1* g. *choline every three* hours for three doses. The last dose was given at 5.15 P.M. Patient had her bowels open twice during the night and three times the next day. Vomiting stopped, and by 6 A.M. on 23rd abdomen was quite soft and patient *made an uninterrupted recovery.*

CASE 9.—Female, aged 49. I performed an abdomino-perineal excision of the rectum at the request of Dr. E. V. Dunkley, on Sept. 11th, 1929. After five days of satisfactory progress patient began to vomit, and had a complete cessation of the passage of flatus and fæces via the colostomy. The abdomen became distended, and the pulse began to rise. No result from a turpentine enema in the colostomy. Treatment: gastric lavage and intramuscular *injections* 0·1 g. acetylcholine every two hours for four doses. After the third dose copious evacuation of flatus and fæces, followed by three days' normal progress, when similar symptoms reappeared. Two doses of acetylcholine were administered, with similar satisfactory results, and thereafter patient made an uninterrupted recovery.

SPASMODIC STENOSIS OF BOWEL

Acetylcholine is also efficacious in relieving spasmodic stenosis of the intestine. The following case is typical of several similar cases treated by this substance:

CASE 10.—Female, aged 15½ years. Operated on for perforated appendix (Nov. 3rd, 1928) with abscess and drainage. Made a normal recovery. Patient readmitted to hospital, Feb. 28th, 1929, with 24 hours' history of colicky abdominal pain, frequent vomiting, and absolute constipation. Temperature, pulse, and respiration normal. Abdomen distended. No other abnormal physical signs detected. Three enemata were administered with no resulting action of the bowels. Twelve hours after admission she was given 0·2 g. of acetylcholine at two-hourly intervals for three doses. The bowels moved twice in the next 12 hours, and the patient had no further alimentary abnormality, and has remained quite well ever since. Subsequent X ray examination failed to reveal any intestinal abnormality.

Had I not known of acetylcholine I should certainly have operated upon this child when the enemata failed to act. In previous similar cases of post-operative adhesions causing acute obstruction, I have frequently found that the obstruction was due to one or very few adhesions causing a spasm of the bowel at the site of adhesion without any actual organic stenosis, and it has always seemed to me that if that spasm could have been overcome for a time long enough for the adhesion or adhesions to be absorbed, no operation would have been necessary.

The acetylcholine in this case would appear to have restored the normal tone of the bowel, to have relieved the spasm, and to have rendered operation unnecessary in this case as it has done in several subsequent cases of a similar nature.

I would, however, not advise its use in this type of case unless the patient is under expert observation in an institution within a few minutes' reach of the operating table, as I feel it is sometimes impossible to differentiate between an organic stenosis and a functional spasm, except that acetylcholine will leave the one unaffected and will relieve the other.

CASE 11.—Female, aged 56. Seen first on April 13th, 1932, in consultation with Dr. L. Scher. Three days' history of absolute constipation and fæculent vomiting. Scar of old appendicectomy with marked distension of abdomen, and marked visible peristalsis. Had had three enemata without result. Treatment: 0·1 g. acetylcholine every hour for four doses, when she passed flatus and fæces freely, and made an uninterrupted recovery.

ACUTE CONSTIPATION

CASE 12.—Male, aged 29 years. Admitted to hospital on Oct. 5th, 1929, as a case of acute intestinal obstruction. There had been absolute constipation for five days. Two enemata given at home had produced no result. There was no vomiting. On admission there were no abnormal physical signs whatever. Three doses of 0·1 g. acetylcholine were injected at six-hourly intervals, and no further treatment was given. The bowels moved slightly after the second injection and several times after the third injection. Since then his bowels have been regular, and a complete X ray examination of his alimentary tract failed to reveal any abnormality. He has been perfectly well ever since, and his doctor informs me that his previous chronic constipation is quite cured.

CASE 13.—Male, aged 21 years. Sent to me by Dr. J. Paxton. Absolute constipation since March 28th, 1930. 29th: mist. alba. ℥i t.d.s. 31st: calomel grs. 5, mist. alba. ℥i t.d.s. April 1st: calomel grs. 5, castor oil ℥i, mist. alba. ℥i t.d.s., and two enemata. 2nd: croton oil ♏ ii, mist. alba. three times a day, liquid paraffin ℥i three-hourly, and two enemata. 3rd: one enema, mist. alba. t.d.s., liquid paraffin as before. I saw this patient on April 4th, with no abnormal physical signs whatever. Treatment: 0·1 g. acetylcholine every two hours for three doses. This was followed by three actions of the bowels which have been perfectly regular since. Subsequent X ray examination failed to reveal any abnormality in the alimentary canal.

CASE 14.—Female, aged 24 years. Seen in consultation with Dr. M. Ravell, Jan. 4th, 1933. History of complete constipation for ten days. During the day had had three vomits, very offensive and semi-fæculent. Large doses of aperients had been given during the preceding three days. Upper abdominal pain and slight distension for 24 hours. No abnormal physical signs detected on clinical examination. I suggested injecting 0·1 g. of acetylcholine every four hours until the bowels began to move. This happened after the second injection, and the patient had three satisfactory actions in the following 12 hours, and has since been perfectly well.

CASE 15.—Male, aged 49. Admitted May 28th, 1931. Two days' history of severe colicky pain in left loin, with absolute constipation. Olive oil and turpentine enemata given without result. On admission distended and tympanitic abdomen. Tenderness over descending colon. No other abnormal signs. Treatment: 0·1 g. acetylcholine hourly for three doses. Immediately after third dose began to pass flatus freely, bowels were well open, and all symptoms disappeared. Five days later X ray examination failed to reveal any abnormality.

CASE 16.—Male, aged 20. Admitted to hospital on May 16th, 1931. Appendicectomy had been performed six months previously. For 24 hours patient had had colicky abdominal pains with vomiting for 12 hours. Clinical examination showed considerable midline distensions with visible peristalsis. X ray examination showed two loops of distended small intestine. In spite of our faith in acetylcholine this patient appeared to need urgent laparotomy for a small gut obstruction. He was given 0·2 g. acetylcholine immediately his clinical examination had been completed, and a similar dose one hour later, just before being put upon the table. On opening his abdomen the site of obstruction was easily seen, and the two ends of a small adhesion which had been causing the obstruction, and which had recently broken, were found. A small fresh clot of blood showed on each torn end. Nothing was done and the patient made an uninterrupted recovery.

ILEUS FOLLOWING OBSTETRIC MANIPULATIONS

CASE 17.—Primipara, aged 27. Difficult delivery of stillborn child Nov. 28th, 1930. On the evening of the 29th abdomen became distended and pulse-rate increased slightly. Visible peristalsis noted. 30th: pituitrin and eserine given in the morning. No result. Pulse-rate increased to 140, temperature 99. Persistent hiccough. High enema given with little flatus result. Dec. 1st: 6 P.M., olive oil enema: no result. Ten P.M. turpentine enema: no result. On the morning of Dec. 2nd I was called in consultation by Dr. J. K. Donald, at which time there had been no bowel movement since Nov. 27th—five days. Patient was then given 0·1 g. acetylcholine hourly for six hours, together with an ox-gall enema, ½ oz. in 4 oz. of water, immediately followed by profuse bowel action. By the morning of Dec. 3rd the abdomen was normal, and thereafter her bowels normally opened.

CASE 18.—I am indebted to my colleague, Dr. Gladys Hill, for permission to publish the following case. Primipara, aged 35. Classical upper segment Cæsarean section early in labour for disproportion. Stovaine spinal anæsthesia with gas-and-oxygen. Operation 10 A.M. Two days later patient's abdomen distended, not relieved by turpentine enema. Three days after operation still distended. No relief from simple enema. Three doses of acetylcholine 0·1 g. given at hourly intervals, with spontaneous action of bowels after third dose. Complete relief of distension and remainder of puerperium uneventful and afebrile.

GENITO-URINARY SURGERY

CASE 19.—Male, aged 65 years. Prostatectomy five days before my opinion was asked. Complete intestinal obstruction (paralytic in type). Not responding to large doses of pituitrin and eserine. Bowels open copiously after first dose of 0·1 g. acetylcholine; two subsequent doses; an uninterrupted recovery.

Conclusions

In some fifty apparently normal post-laparotomies I have used acetylcholine as a routine, starting with 0·1 g. 36 hours after the operation, and repeating this dose every six hours until flatus or fæces are passed without enemata. This usually happens, as indeed it does in many entirely untreated cases, in from six to twelve hours, but as many of these cases had severe general peritonitis my impression has been that their post-operative course has given rise to less anxiety than it would have done without the acetylcholine. But I feel that many more cases must yet be treated before advising acetylcholine as a routine in the post-operative treatment of every laparotomy.

Several cases have been seen in which doubt existed as to whether the condition present was due to mechanical or paralytic obstruction. I have made it a practice to give these patients 0·1 g. of acetylcholine hourly for six doses. Many unnecessary operations have been avoided and no untoward effects produced in organic obstruction cases.

Most patients with severe post-operative distension, gas pains, and paresis of the bowels are considerably improved by the administration of acetylcholine by intramuscular injection. In paralytic ileus acetylcholine appears to be almost specific in curing the condition.

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ATYPICAL TERATOMA AND SPHEROIDAL-CELLED CARCINOMA OF ONE GERMINAL GLAND

ASSOCIATED WITH EUNUCHOIDISM, IN AN APPARENT FEMALE

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THE following case is of interest partly because of the rarity of eunuchoidism in the female and partly because of the nature of the tumour found.

HISTORY

A. B. came under observation in February, 1932, at the age of 24½ years. Up to the age of 8 she was apparently a normal healthy female child. She had whooping-cough, croup, diphtheria, and several attacks of pneumonia. When 8 years old she was admitted to the London Hospital with a history of several months' abdominal pain, loss of appetite, wasting, pallor, and apathy. Dullness and diminished breath sounds were found at the base of the right lung, the abdomen was moderately enlarged, tense, and tender, and a diagnosis of tuberculous peritonitis and enlargement of mediastinal glands was made. During the next four years her abdomen was frequently painful and sometimes enlarged, hard, and tender to the touch. Then, at the age of 13, she had a sudden attack of severe lower abdominal pain with vomiting; the pain became right-sided, a tender mass was felt per rectum on the right side, and she was operated on. A right ovarian tumour twisted on its pedicle was found and removed, and a scarred appendix was also removed. There is no record of the appearance of the remaining pelvic organs. She made a good recovery, and after the operation her chronic abdominal symptoms completely disappeared.

From that time onwards her general health remained excellent, but her development was abnormal. As a child she had been smaller than the average and thin. At 16 she began to grow rapidly and soon weighed more than 9 stone. She never menstruated. Her breasts remained quite flat until she was 23. Scanty hair appeared on the pubes, none in the armpits. Her hands, feet, and head became abnormally large, and her feet, judging by an increase in the size of her shoes from 6 to 8, continued to grow between the ages of 20 and 24. From the age of 16 she complained of hot flushes, during which she felt very hot and breathless for a minute or so and her friends noticed flushing of her face. These uncomfortable attacks became more frequent until they occurred several times every day. She also complained of intermittent aching sensations in the thighs, ankles, sterno-clavicular regions, and elsewhere in the limbs; she was inclined to be thirsty, drinking water frequently between meals and half to one pint at night.

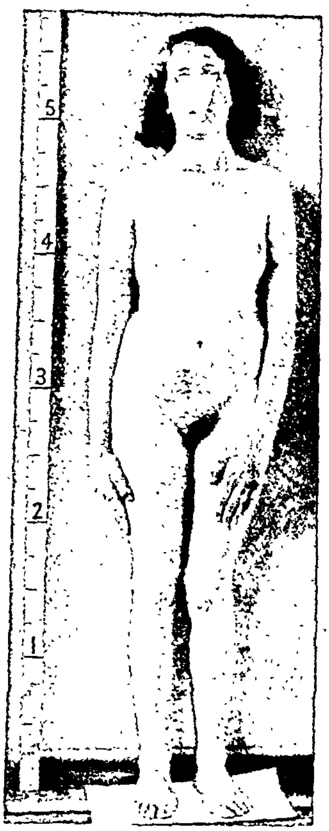

FIG. 1.—Photograph of the patient.

At the age of 20 she married a man she had known and been friendly with for six years; she was always fond of him; sexual intercourse took place infrequently and was very distasteful to her.

EXAMINATION

On *physical examination* she was found to be a healthy looking subject, 5 ft. 7¼ in. in height and 10 st. 8 lb. in weight, with the external appearances shown in Fig. 1. The head was abnormally large, especially the facial part of it; the nose was rather broad and thick, the lower jaw large. The arms and legs were disproportionately long. The hands were large, but the fingers were of normal shape, neither tapering nor thickened. There was a slight degree of genu valgum on the left side. The feet were large and unusually broad across the heads of the metatarsals. The ankles could be dorsiflexed only to a right angle. The skin was smooth and of normal colour and texture. Hair was abundant on the head, normal on the eyebrows, practically absent from the axillæ and scanty on the pubes. The teeth were well developed and sound, with no spacing. There was a moderate amount of subcutaneous fat, of a distribution not typically feminine but resembling the feminine type much more than the masculine. The breasts were small and no glandular tissue could be felt in them. The nipples were poorly developed. In the rest of the routine physical examination no significant abnormal signs were found.

The *genitals and pelvic organs* were examined by Mr. R. A. Brews under general anæsthesia. The pubic hair was of female distribution, very scanty and not more than would be expected six months after puberty. The mons was normal. The labia majora and minora were underdeveloped. The clitoris was small. The vagina was of normal size and length. The cervix was small, like that of a childless woman after the menopause. The body of the uterus was very small, like that of a child of six, and very difficult to feel. No ovary could be felt on the right side of the pelvis, and nothing clinically resembling an ovary on the left side; there was, however, on the left side a small mobile nodule, not bigger than a haricot bean.

X ray examination (Dr. M. H. Jupe) showed a large thick skull, the sutures of which were not closed; the sella turcica was definitely larger than normal, even when allowance was made for the large size of the skull; its vertical diameter, measured on a direct sella film, was 12 mm. and its longest anteroposterior diameter 14 mm., while the inter-clinoid distance was 5 mm. The tips of the clinoid processes were not separated. The sphenoidal sinuses and the frontal sinuses were large; the pineal body was calcified. Incomplete union of epiphyses was seen in the upper end of the humerus, the lower ends of radius and ulna, the metacarpals, the phalanges of the hand, the lower end of the femur, the upper end of the tibia, and the iliac crest; the epiphyseal lines were most distinct in the bones of the wrist and hand (Fig. 2). Union was complete in the acetabulum, ischial spine, tuber ischii, anterior inferior iliac spine, ischio-pubic ramus, upper end of the femur, metatarsals, and phalanges of the foot. There was no "tufting" of the terminal phalanges of the fingers such as is seen in acromegaly.

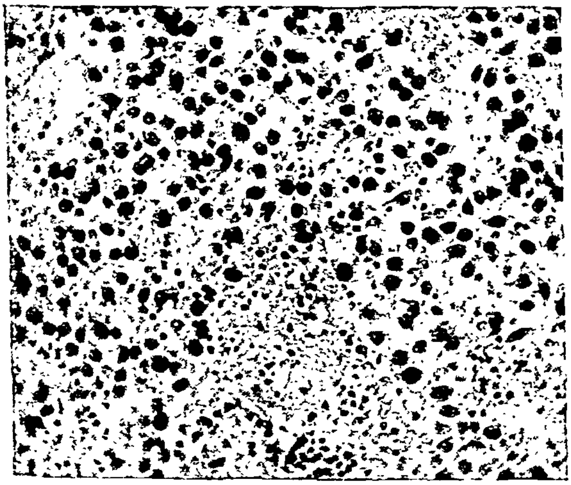

FIG. 3.—Spheroidal-celled carcinoma in upper part of tumour. Ehrlich's hæm. and eosin. (× 190.)

The *visual fields* and the appearance of the *fundi* were normal. After the ingestion of 50 g. of glucose the *blood-sugar* (Folin and Wu's method) rose from a fasting level of 0·09 g. per 100 c.cm. to 0·121 at 30 mins., 0·148 at 70 mins., and 0·125 at 120 mins.—i.e., a normal response. The unrestricted fluid intake was 68½ oz. in 24 hours; the output, 58 oz.

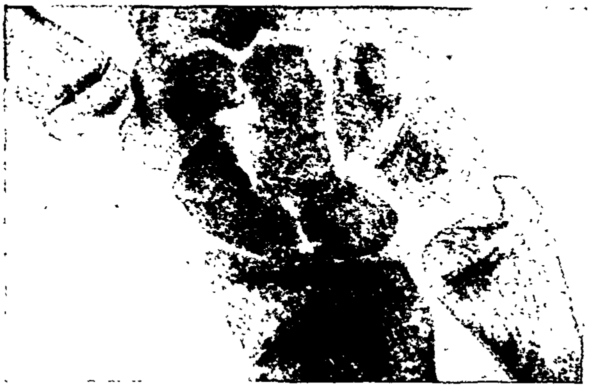

FIG. 2.—Radiogram of the wrist showing incomplete union of epiphyses.

PATHOLOGICAL REPORT ON THE TUMOUR

(By Prof. Hubert M. Turnbull)

Naked-eye examination.—The specimen removed at the operation in 1921 (S.D. 129/1921) was a rounded mass measuring 9 × 7 × 5 cm. Over one side passed a Fallopian tube (8 cm. long) with patent ostium abdominale. The outer surface was dull, and either light or dark red; a few tags of delicate fibrous tissue were attached to it. The cut surface was partly solid and partly cystic. The solid part was soft. It showed rounded, granular, pink and yellow grey nodules, which measured up to 2 cm. in diameter and were separated by smooth, purple, and red trabeculæ. The cystic portion measured 5 cm. in diameter. It was lined by a thin, bluish membrane, which was often raised by trabeculæ of a soft pink or deep red, hæmorrhagic, tissue containing smaller cysts.

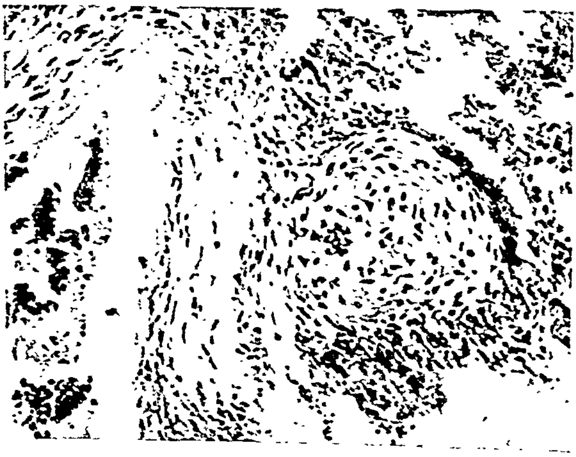

FIG. 4.—Nodule of cartilage and cyst lined with columnar epithelium in teratoid part of tumour. Ehrlich's hæm. and eosin. (× 150.) The group of dark cells upon the cartilage are red corpuscles displaced by the pressure of a diamond marker.

Microscopic examination.—A piece including the Fallopian tube and a piece from the opposite pole were taken. Both pieces extended from solid superficial tissue to cystic tissue. They were fixed in 4 per cent. saline formaldehyde and embedded in paraffin ; sections were stained with Ehrlich's hæmatoxylin and eosin, Weigert's iron hæmatoxylin and van Gieson, Mallory's phosphotungstic acid hæmatoxylin, Wigert's fuchselin and neutral red, Verhoeff's stain for elastic tissue, Ehrlich's hæmatoxylin and mucicarmin, and silver according to Laidlaw's collagen-reticulum method.

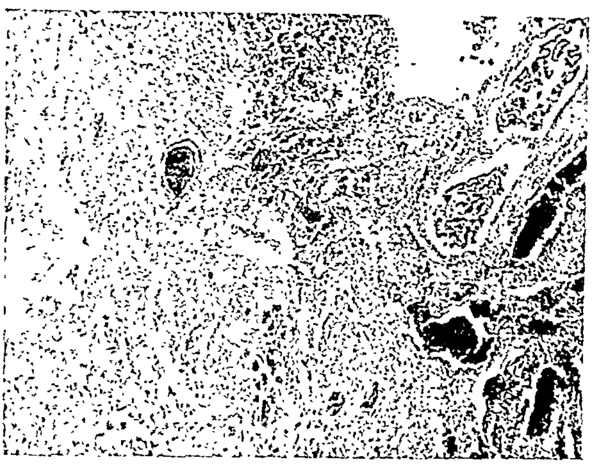

FIG. 5.—Cavernous tissue (on the left) merging into teratoid tissue (on the right) in deeper part of tumour. Weigert's iron hæm. and van Gieson. (×25.)

The peritoneum of the broad ligament, a little adipose tissue beneath the peritoneum and, in one block, a Fallopian tube of normal structure occupy the surface of the sections. They are hæmorrhagic, but their structure is easily recognised. Beneath them lies solid tissue which is extremely hæmorrhagic, extensively necrosed and greatly infiltrated with neutrophil leucocytes. It contains numerous veins distended with blood and has a stroma of stout, wavy, collagen fibres, and delicate reticulum fibres. Elastic fibres are seen only in the walls of vessels. In places the collagen and reticulum fibres are slightly separated by red corpuscles and leucocytes. In others they are more widely separated, and are partly destroyed, by groups of large cells, whilst in the areas that appeared granular to the naked eye the vascular collagenous tissue is reduced to slender trabeculæ which imperfectly separate masses of large cells into acinar groups (Fig. 3). Mallory's method shows a net of coarse filaments of fibrin within the acini but no glia fibrils. Most of the large cells are completely necrosed; the nuclei of the remainder are almost all pyknotic. The cells are dissociated. The better preserved are round, or polygonal with rounded angles. In mean diameter most measure about 9 µ and have a nucleus of 7·5 µ, but there is much variation in size. There are small examples measuring 7·5 µ with a nucleus of 4·5 to 6 µ, many large examples from 12 to 18 µ with nuclei of 8 to 11 µ, and a few giant multinucleate forms. The cytoplasm in hæmatoxylin and eosin preparations is hyaline and stained deeply by eosin ; in phosphotungstic acid hæmatoxylin preparations it is finely granular. The nuclei that are not pyknotic show a delicate membrane, chromatin threads arranged in a moderately close net of angular mesh, and many conspicuous nodes. A few contain no nucleoli or one to three small nucleoli. Most contain one large nucleolus, rarely two or three large nucleoli. In phosphotungstic acid hæmatoxylin preparations most of the pyknotic nuclei show such large nucleoli. The large nucleoli measure in diameter from 1 µ in the smaller cells to 5 µ in some of the largest. Similar cells frequently lie within vessels, even arteries.

The cystic tissue included in the sections lies deep to the above. In one block this tissue is very scanty. In the other it shows an outer layer, and an inner or deeper layer, which merge into each other. Both layers are less hæmorrhagic than the solid tissue. Both are spongy. In the outer layer the cavities are usually rounded, and some are large. The largest is empty and is lined with large flattened cells. Other cavities contain blood and are apparently venous sinuses. Many others contain desquamated ribbons of columnar epithelium (Fig. 4), or desquamated, dissociated polygonal and round epithelial cells. The columnar cells measure from 11 × 4 µ to 12 × 6 µ, with nuclei of 7 × 4 µ to 8 × 6 µ. In phosphotungstic acid hæmatoxylin sections they have a granular cytoplasm, and a membrane stained deep blue on their free surface; they show no cilia and no blepharoplasten. No mucous secretion and no mucous goblet cells are shown in a series of sections stained with mucicarmin. The nuclei have a stout membrane, a somewhat close net of threads of chromatin, small nodes, and one or two large, conspicuous, nucleoli, measuring up to 2 µ in diameter. In some ribbons the cells lie in more than one layer. The free examples have no membrane. They measure in mean diameter from 6 to 9 µ, with nuclei of 4·5 to 6·5 µ.

The trabeculæ between the cavities are usually broad. Their structure varies very greatly. In places scanty spindle fibrocytes lie in a stroma of collagen fibrils. Frequently very scanty, spindle, and stellate cells and a loose net of very delicate fibrils in an unstained matrix form a jelly-like tissue. In places the cells of this jelly tissue increase greatly in number, while their nuclei become more rounded, until an embryonic tissue is formed in which small cells with round or slightly oval nuclei lie closely packed in the meshes of a delicate reticulum. In a few places there are small rounded areas of embryonic hyaline cartilage (Fig. 4). In the periphery of each such area is a narrow condensed zone in which the reticulum has narrow meshes enclosing small fusiform cells. Towards the centre the meshes enlarge and become polygonal, whilst the reticulum fibrils swell and in hæmatoxylin and eosin preparations form a hyaline, blue matrix. Each mesh usually contains a single polygonal cell with a clear space round its cytoplasm ; rarely, two such cells lie in a single mesh.

The inner, deeper layer of cystic tissue is cavernous (Fig. 5). Numerous, long, narrow, irregular communicating clefts are separated by trabeculæ of slightly greater width. The trabeculæ are formed by scanty spindle fibroblasts and occasional unstriped muscle-fibres in a stroma of stout collagen fibres. They contain a few cross sections of wide capillaries engorged with blood. No elastic fibres can be demonstrated. A few of the outermost clefts contain free columnar and round epithelial cells similar to those in the spongy layer immediately above. The remaining clefts are empty or contain a variable number of red corpuscles. They are lined here and there with discrete cells or groups of cells in contact. The cells are of lozenge or spindle shape. They measure from 10 × 4 µ with a nucleus of 6 × 4 µ, to 20 × 6 µ with a nucleus of 6 × 5 µ. The larger examples are frequent. The cytoplasm is deeply stained and the nuclei are pyknotic.

In serial sections of the block which contained most of the cystic tissue no other structures were found.

The tumour lies in the position of an ovary beneath a Fallopian tube of normal structure. In its lowest part is a cavernous tissue which is well differentiated and appears to be part of the organ in which the tumour has arisen and not to be part of the neoplasm. The form of the spaces and the structure of the intervening trabeculæ resemble closely those of the rete testis except that elastic fibres are absent. The characteristic lining, however, of the rete testis with closely packed small cubical, occasionally flattened cells is absent. According to Koelliker[1] the rete ovarii may be lined with flattened cells. I have not, however, seen so extensive a rete in the ovary. Further, the lining resembles endothelium both in the form of the cells and their apparent intermission, and there is no difference in structure between the transversely cut capillaries filled with blood and the longitudinally cut irregular spaces which are more or less empty. There can be no doubt that they are both part of a vascular cavernous tissue. The hilum of the normal ovary contains a cavernous tissue of wide venous and capillary spaces with arteries in the trabeculæ between them. In adults the venous spaces with complete or incomplete muscular walls are in excess of the capillary spaces, but in young girls they are less numerous and less conspicuous. The cavernous tissue in the present case probably represents this cavernous tissue of the hilum of the ovary, but it differs so strikingly from the normal in the absence of elastic fibres, definite venous spaces and arteries, that it cannot be accepted as proof that the organ is an ovary.

Immediately above the cavernous tissue and merging into it is a jelly-like tissue and a cellular-embryonic connective tissue containing nodules of hyaline cartilage and enclosing cavities lined with tall columnar cells. This tissue is clearly teratoid. It includes derivatives of two germinal layers but no derivatives of the third layer, ectoderm, were found. It is not, therefore, proved to be a teratoma, but the mixture of tissues is one so often met in atypical or embryonal teratoma (Arkanazi[2]) that there can be little doubt that it is an atypical teratoma.

The most abundant tissue of the neoplasm is superficial, and consists of a malignant medullary growth of spheroidal cells. The extensive degeneration and necrosis caused by the venous infarction makes it impossible to identify these cells with certainty. The better preserved cells, however, resemble closely those of the large round- or spheroidal-celled carcinoma, formerly called sarcoma, that may occur alone in the testicle and that has been found in the London Hospital institute of pathology so often as a constituent of atypical teratoma of the testicle (Cairns[3]). The nuclei, when not pyknotic, have a similar structure. The cytoplasm is, however, more homogeneous, deeply stained, and eosinophil. But these differences in the cytoplasm are more pronounced in the cells with pyknotic nuclei and in the completely necrosed cells. They appear to be an expression of degeneration—a coagulation necrosis.

The tumour, therefore, appears to be an atypical teratoma associated with spheroidal-celled carcinoma, similar to the growth that occurs frequently in the testicle. Its relation to the hilum is identical with that in many atypical teratomata of the testicle but the structure of the hilum suggests ovary and not testicle.

REMARKS

Apart from the atypical teratoma with spheroidal-celled carcinoma in one of the sex glands, the abnormalities in this case are sexual hypoplasia, which is shown by the absence of menstruation and the imperfect development of uterus and external sexual characters, and a mild degree of gigantism, which is shown by the "heavy" build of the patient, the large size of the skull and other bones, and the delayed union of certain epiphyses. Although the patient appears to be a woman, and certainly shows no masculine features, the sex has not been unequivocally established, for there is no record of even the naked-eye appearance of the left sex-gland, and of the right the most that can be said is that the cavernous tissue in the hilum suggests ovary rather than testicle. A very small uterus was felt with difficulty by digital examination.

In view of the disproportionately large size of the sella turcica, the gigantism might be attributed to enlargement and over-function of the pituitary. There is no evidence, however, that the condition is acromegalic in the sense of being due to a chromophil adenoma of the anterior lobe, for no signs of pressure on clinoid processes or optic chiasm are present, the terminal phalanges of the fingers are not "tufted," the hand is not of the acromegalic shape, and there is no disturbance of sugar metabolism or of water intake. While it is true that the functions of the sex glands are often depressed in acromegaly, it is scarcely possible that a pituitary tumour could produce a complete arrest of sexual development along with such slight changes in somatic development and function. On the other hand changes in body growth, and even disproportionate enlargement of the pituitary, are known to follow primary failure of the sexual glands. Enlargement of the sella turcica and ununited epiphyses of humerus, radius, ulna, and pelvic bones were found by Tandler and Gross[4] in the post-mortem examination of a negro aged 28 who had been castrated in childhood. Altmann[5] described the organs in ten cases of eunuchoidism and one of late castration in males: the average weight of the fixed pituitaries was 0·766 g., which is in excess of the corresponding normal figure of 0·613 g. quoted from Erdheim and Stumme, and delayed union of epiphyses was often found. Those examples are in males. Records of castration and eunuchoidism in females are rare, but Borak and Windholz[6] describe "enlargement" of the pituitary (weight not given) with a great increase of eosinophil cells in a woman of 33, in whom the ovaries had been irradiated two and a half years previously to the extent of destroying all the Graafian follicles; and Steinitz[7] described a tall eunuchoidal woman of 50 in whom the sella turcica was "somewhat broad." In view of these findings, therefore, it is reasonable in the present case to attribute not only the sexual hypoplasia but also the gigantism with the pituitary enlargement, to a deficiency of sexual hormones: the growth changes as well as the sexual ones are eunuchoidal.

Eunuchoidism implies failure of both sex glands. The right gland was destroyed by the tumour, and removed, when the patient was 13 years old. The left gland, however, cannot have been destroyed by a similar process, for the tumour was malignant, and if a metastasis or another such tumour had occurred before puberty in the left gland, it would presumably have declared itself before the patient was 24. The defect of the left gland, therefore, must have been either a developmental failure or an atrophic process, and it must date from an early age, for when the patient was examined under anæsthesia, at the age of 24, the only palpable structure representing the left gland was a nodule the size of a haricot bean. There is no evidence to show whether the right gland was originally normal or defective, but it is not unlikely that both glands were similarly abnormal before the development of the tumour in the right one.

The diagnosis is therefore: eunuchoidism in an apparent female aged 24, due to primary defect of the sex glands; atypical teratoma with spheroidal-celled carcinoma of the right sex gland, removed on account of torsion at the age of 13.

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ACTION OF FOLLICULIN AND PROLAN
ON THE REPRODUCTIVE ORGANS OF THE BAT DURING HIBERNATION

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The following experimental investigations arose out of a query of a clinical character. A few years ago[1] I was able to show that such various clinical pictures as amenorrhœa and prolonged uterine hæmorrhage could be produced by the same functional process, namely, as a result of too powerful and too prolonged a production of the follicular hormone, folliculin (œstrin). I have called these functional disturbances polyhormonic syndromes. Their causation depends on the persistence of the follicle. The follicle grows without bursting and so without the formation of a corpus luteum. As a result of the persistence of the follicle a continuous stream of folliculin is secreted which in its turn leads to a hyperproliferation of the uterine mucosa, which in consequence may develop into an adenocystic hyperplasia. We find this anatomical structure not only in polyhormonic hæmorrhages but, as I have recently shown,[2] also in cases of primary polyhormonic amenorrhœa.

The failure of the follicle to burst is therefore of real clinical significance, and it thus appears to me necessary to investigate thoroughly the causes of follicular rupture. As shown in the earlier experiments, the ovary is controlled by the anterior pituitary lobe, which with its gonadotropic hormone (Prolan) brings about ripening of the follicle and ovum. Rupture of the follicle also is doubtless caused by the anterior pituitary lobe, since a rupture of the follicle as well as a migration of the ovum through the tubes into the uterus can be produced in an immature animal by means of prolan. It is therefore certain that follicular rupture is hormonic in its causation. The question remains whether, in addition, exogenous conditions do not also play a part as contributory factors. It is well known that in many animals—e.g., rabbits—rupture of the follicle is in most cases produced only as a result of coitus, whereby the stimulus for follicular rupture, as Parkes and Fee have shown, occurs also via the anterior pituitary lobe. Among the exogenous factors, climate and changes of temperature can also play a part. Clinically we are aware that in women who go to live in another climate menstruation may cease for a protracted period. I have observed several cases of this kind where the amenorrhœa associated with change of climate was of the polyhormonic type, due to the persistence of the follicle. Can the extraneous factor of change in temperature influence the rupture of the follicle? It seemed to me that tests on the hibernating animal were most suitable for the experimental elucidation of this question, since here the reproductive organs are in a state of complete functional rest. I made my investigations on bats, and apart from the question of rupture of the follicle I studied a few other problems of which the following is a brief report.

Bats generally begin to hibernate in November. They suspend themselves in clusters, rolled up into balls, in caves or in cellars. The body temperature of the animals drops rapidly and approximates the surrounding temperature, being about 2° higher than that of the air. A homiothermal animal develops into a poikilothermal one. Before the commencement of hibernation copulation takes place, but not fertilisation. The sperm remains throughout the whole of the winter in the uterine cavity. In the spring the ovum matures spontaneously and still finds spermatozoa capable of fertilisation in the uterine cavity.

THE TESTS

The bats[3]—which were sleeping in separate cages in a cellar at 4° C.—were anæsthetised, one of the horns of the bicornute uterus incised, a drop of secretion withdrawn from the uterine cavity by means of a platinum loop, and then put into Ringer's solution. It is astonishing to see in the drop of secretion which has just been withdrawn from the cold torpid animal masses of actively motile spermatozoa. In this connexion the temperature of the diluting fluid is of minor importance. The spermatozoa are motile in a fluid at 37° C. as well as in one at 5° C. I had the impression, however, that a low temperature of the Ringer's solution (5°–10° C.) increased the motility of the spermatozoa. In other mammals, also, the spermatozoa show a maximum of motility at a temperature of 10°–15° C. (Hammond and Walton, Moore, Crew, Kraus). It may be a purposeful arrangement that the testes lie outside the abdominal cavity in the scrotal sac, where the temperature is lower.

I believe that the spermatozoa pass the winter in the uterus of the bat in a freely motile state, although they show their full motility immediately after withdrawal from the uterine cavity. It must be pointed out that I was able to demonstrate the presence of spermatozoa in the uterine cavity in only some of the animals; frequently the uterus contained none.

The examination of the ovaries was of special interest. These small structures lie near the proximal end of the uterine cornua. Often they are hardly recognisable on account of the large cushion of fat which the bat has accumulated in the abdominal cavity for the period of hibernation. The ovaries are characterised by an intense yellow colour such as I have not hitherto seen in mammalian ovaries. The yellow colour is, I believe, due to deposits of carotinoids, which might point to the relationship of carotinoids to sexual function, as was first shown by H. von Euler. These pigments cannot be lying in a corpus luteum, as is usual in the ovaries of mammals, since the ovaries of the bat never contain a corpus luteum in winter. The pigments are diffusely spread throughout the whole ovary.

A large number of the ovaries were examined by serial section. In this way it was shown that whereas one ovary would always be in a state of functional rest and consist only of primordial follicles, another would contain usually one, seldom two, enlarged follicles with cumulus oöphorus. These lie a little removed from the surface.

The vaginal mucous membrane of the bat exhibits in winter 6–8 rows of polygonal cells above the basal layer, without any cornification of the uppermost layer of cells being observed. Nor is there a mucous cell layer present. Occasionally one finds also in the vagina well-preserved spermatozoa. On histological examination of the uteri one finds, in some of the animals, spermatozoa in plenty. I have, however, never found the spermatozoa in the uterine cavity.

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[1] Zentralbl. f. Gynäk., 1930, liv., 1.

[2] Unpublished work to appear in Acta Gynecologica Scandinavica.

[3] I am greatly indebted to Dr. Eisentraut for providing the bats.

in such numbers as to be packed closely together in the manner Courrier pictures in his book. It is possible that copulation takes place in only some of the animals before hibernation, or that the spermatozoa perish; at all events, one can demonstrate spermatozoa in the uterus in only a proportion of the animals.

The hibernating bat appears to me to be a good object for the study of exogenous influence on the rupture of the follicle. Can one produce a rupture of the follicle by means of a change in temperature? As far as I have been able to discover in zoological literature, this question has hitherto been answered in the negative. Benecke observed in the case of bats, kept during the winter at room temperature, simply an enlargement of the follicle, but no rupture. My observations were different. After the bats had been sleeping for a while in the cellar, they were brought into the laboratory where the temperature was 18°–20° C. The animals woke up at night and took some food. After 14 days I was able to discover an early pregnancy with a living fœtus! This discovery was made on Dec. 23rd. The change in temperature had therefore sufficed, even in winter, to bring about a rupture of the follicle. The ovum had travelled into the uterus and was there fertilised by a spermatozoon. Rupture of the follicle was therefore influenced by the exogenous stimulus. It thus appears to me to have been proved, and this is clinically important, that external climatic influences may cause rupture of the follicle. Doubtless here also hormonic factors—i.e., the anterior pituitary lobe—play the decisive part, since I was also successful in bringing about the rupture of a follicle in a bat in midwinter by means of prolan. Here again the ovum wandered into the uterus, was fertilised and a living fœtus resulted. The highly important sex hormone, the gonadotropic anterior pituitary lobe hormone—i.e., prolan—is therefore able to bring about follicular rupture in hibernating animals in winter, an occurrence which does not take place naturally until the spring. I conclude from these experiments that climatic influence on ovarian function is dependent on the pituitary (anterior lobe).

In further experiments the influence exercised by the follicular hormone (folliculin) as well as by the gonadotropic anterior pituitary lobe hormone (prolan) on hibernating bats was tested. It was possible to produce by means of folliculin a cornification of the superficial layers of cells such as we find in mice and rats during œstrus. Whether this cornification occurs physiologically in bats during the warm season I cannot say. Circumstances did not allow me to continue the investigations in the spring.

If prolan is injected into the bats, the enlarged follicle, already physiologically present, can be converted into a corpus luteum. More than this, I was able to produce, by the introduction of large doses of prolan, a series of 4–6 lutein bodies in the ovary—i.e., the same ovary contained several corpora lutea. Although the ovary in winter contains only one, at most two, enlarged follicles, there were here 4–6 newly formed corpora lutea as a result of "hyperprolanisation." They appeared to be very well vascularised and must therefore be regarded as capable of functioning.

SUMMARY

(1) The exogenous stimulus of warmth produces rupture of the follicle in bats during winter. The ovum wanders through the tube into the uterus and is there fertilised by a spermatozoon. A normal pregnancy occurs with a living fœtus.

(2) The gonadotropic anterior pituitary lobe hormone—i.e., prolan—is capable of producing rupture of the follicle in bats during winter; here also a normal pregnancy with a living fœtus is produced.

(3) By means of folliculin and prolan we can produce in the bat during winter all the phases of the generative process; œstral reaction of the vaginal mucous membrane, conversion of the enlarged follicle into a corpus luteum, hyperluteinisation, pregnancy.

SORBITOL (SIONON) FOR DIABETICS

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Sionon is the trade name for D-sorbitol, $C_6H_8(OH)_6$, a polyhydric alcohol which is closely related to the hexoses. It does not reduce Fehling's solution, nor does it yield an osazone. It has been put on the market as a substitute for sugar in diabetes. The substance is a light white powder, easily soluble in warm water, and having a sufficiently pleasant sweet taste which is not destroyed by cooking.

The effect of sionon on the blood-sugar has been studied on two cases of juvenile diabetes. Two methods have been used. In the first 25 g. of dextrose were given to the fasting subject and the blood-sugar estimated at half-hour intervals for three hours. A similar quantity of sorbitol was given under similar conditions a few days later. Figs. 1 and 2 and Table I. show these results. The rise in the blood-sugar after sorbitol is slight compared with that of dextrose.

TABLE I. (CASE 1)

—	Dextrose 25 g.			Sionon 25 g.		
	Blood-sugar %	Urine-sugar.	Acetone bodies.	Blood-sugar %	Urine-sugar.	Acetone bodies.
Before	0·176	0	+ +	0·200	0	+ +
½ hour	0·206	0	..	0·215	..	..
1 „	0·366	0	+ + +	0·225	0	+ + +
1½ hours	0·434	..	..	0·263	..	..
2 „	0·522	+ + +	+ + +	0·280	Sl. tr.	Tr.
3 „	0·500	+ + +	+ +	0·263	..	..
CASE 2						
Before	0·100	+	+ + +	0·083	Sl. tr.	+ + +
½ hour	0·153	..	..	0·121	..	..
1 „	0·253	+	+ + +	0·120	Tr.	+ + +
1½ hours	0·297	..	..	0·076	..	..
2 „	0·310	+ + +	Sl. tr.	0·082	..	..
3 „	0·216	+ + +	0	0·065	+	+ +

TABLE II. (CASE 3).—*One Mild Diabetic Case*

Blood-sugar.	Glucose (45 g.).	Sionon (50 g.).
Before	0·100	0·164
½ hr. after	0·181	—
1 „ „	0·266	0·184
2 hrs. „	0·186	0·178
3 „ „	—	0·153

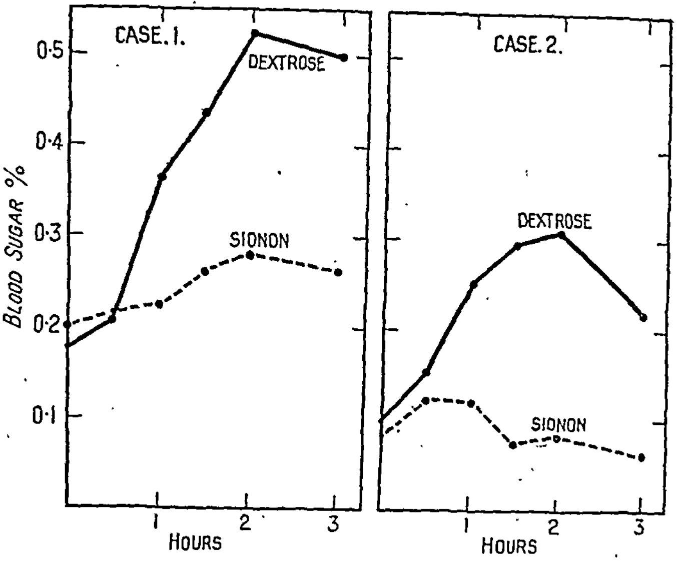
A similar result was obtained with a mild elderly diabetic, in whom a slight rise in the reducing value of the blood was obtained, but much less than with glucose (Table II.). This slight rise is not understood.

In the second method sorbitol was added to the diet and the change in the blood-sugar was examined.

In Case 1 25 g. and in Case 2 40 g. a day were given. Examination of Table III. shows that there was only a slight difference in the general level of the blood-sugar. In both cases, however, this was in an upward direction, so it may be concluded that there is a small effect on the blood-sugar level.

The urinary acetone excretion as shown by Rothera's test was also noted in order to see if there was any antiketogenic action. The differences were not marked, but again in both cases less acetone was passed when sorbitol was being given. An examination of the acetone excretion in Table I. shows a similar result, especially in Case 1; here the fasting acetonuria is practically abolished by sorbitol.

FIGS. 1 2



Thirdly, the immediate effect of sionon in relieving insulin hypoglycæmia was observed. In Table IV., both from the blood-sugar figures and the feelings of the patients, it is clear that sionon had no effect, whereas glucose produced a quick change.

And fourthly, and probably most important and decisive, sionon failed to increase the glycogen in the liver of starved rats. Glucose and all other available carbohydrate quickly does so, as is shown in Table V.

TABLE III.—*Effect of Adding Sionon to the Diet*

CASE 1

—	Blood-sugar percentage.			Acetone 24-hr. urine.
	11.30 A.M.	2.30 P.M.	5 P.M.	
Before ..	0.061 0·075 0·083 Av. 0·073	0·207 (0·207)	0·209 0·266 Av. 0·237	Tr. ” 0 Tr.
25 g. sionon daily.	0·067 0·088 0·100 0·084 Av. 0·085	0·076 0·122 Av. 0·099	0·255 0·306 0·258 Av. 0·273	Tr. 0 0 0 0
After ..	0·088 0·064 0·073 0·096 Av. 0·084	0·077 0·159 Av. 0·118	0·163 0·298 Av. 0·230	0 0 + 0 0 + +

CASE 2

—	11.30 A.M.	2.30 P.M.	5 P.M.	Acetone 24-hr. urine.
Before ..	0·067 0·069 Av. 0·068	0·172 0·122 Av. 0·147	0·090 0·121 Av. 0·105	+ + 0 0
40 g. sionon daily.	0·078 0·069 0·095 Av. 0·081	0·153 (0·153)	0·112 (0·112)	0 0 0 0
After ..	0·071 0·060 Av. 0·066	0·118 (0·118)	0·100 (0·100)	Tr. Tr. Tr.

TABLE IV.—*Effect of Sionon in Hypoglycæmia*

	Case 1.	Case 2.	Remarks.
B.-s. per cent.	0·067	0·079	Symptoms.
20 g. sionon given.			
B.-s. ½ hr. later ..	0·058	0·077	Symptoms persist.
20 g. glucose given.			
B.-s. ½ hr. later ..	0·125	0·174	Symptoms gone.

B.-s. = Blood-sugar.

The condition of the small intestine in the rats fed with sionon was interesting. Intense hyperæmia and dilatation was present, which from our experience with other similar "sugars" makes it probable that sionon is not absorbed and acts as a foreign sugar in the intestine. To our mind this limits the amount of sionon that can safely be used to be a maximum of 50 g. a day, and this should be given in divided doses.

TABLE V.—*Liver Glycogen (in Rats three hours after 2 g. Sionon or Glucose*

Average from four rats.

Sionon.	Tap water.	Glucose.
0·114 per cent. ..	0·124 per cent. ..	0·080 per cent.

CONCLUSIONS

Sionon (D-sorbitol) can safely be used as a sweetening agent for diabetics as it does not enter directly into carbohydrate metabolism. The probability of intestinal irritation must limit the dose. Also its price makes it a luxury, which can usually be more economically provided by the use of ordinary sugars and slightly more insulin.

Clinical and Laboratory Notes

A NOTE ON THE USE OF ACETYLCHOLINE IN PARALYTIC ILEUS

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MY experience of the use of acetylcholine extends over the last three years, during which period I have used it in about 20 cases. My attention was first attracted to its use by the papers of Lawrence Abel and Wolf and I have since had opportunity of confirming their findings, particularly in so far as they apply to paralytic ileus associated with and due to general or local peritonitis.

The immediately post-operative or "active" ileus is best treated by rest and morphia, but at varying intervals after the second day a very grave condition is liable to arise, characterised by constant abdominal pain, vomiting, progressive abdominal distension, rising pulse-rate, and collapse. An enema as a rule gives a "coloured" result only or is retained, and in the absence of relief to a stomach-tube the patient's condition gets rapidly worse and the imminence of a fatal outcome is apparent. My practice is to give half to one pint of normal saline and 5 per cent. glucose intravenously, a human or ox-bile enema, and an initial 0·2 g. of acetylcholine intramuscularly followed by 0·1 g. at hourly intervals for three hours. The following two cases in which acetylcholine and intravenous saline alone were used will serve to illustrate its use.

Case 1.—A schoolboy, aged 16, was operated on for perforated gangrenous pelvic appendicitis and general peritonitis 60 hours after the onset of the condition. On the fourth day his condition was one of severe paralytic ileus with muttering delirium. The bowels had not acted since operation, the abdomen was distended and tympanitic, and the blood-urea was 270 mg. per 100 c.cm. One pint of intravenous saline and glucose was given and acetylcholine as above. During the next six hours the patient passed many copious fluid stools and made an uninterrupted recovery. Subsequent investigation excluded renal disease.

Case 2.—A professional man, aged 45, was seen with a four days' history of acute abdominal pain, much vomiting, and constipation. He was obviously very desperately ill —temperature 102·5° F., pulse 134. The Hippocratic facies was well marked and the abdomen was distended and showed generalised rigidity. At operation the peritoneal cavity was found to be full of fæculent pus from multiple perforated diverticulitis of the iliac colon. This perforated area was embedded, and pelvic drainage and a cæcostomy performed. A litre of intravenous saline was given at operation. By the second day very little drainage had occurred by the cæcostomy. The patient was distressed and the abdomen distended and tympanitic. Saline introduced via the cæcostomy was retained. Acetylcholine 0·2 g. was now given intramuscularly, followed by 0·1 g. at hourly intervals. Within two hours the cæcostomy had acted several times and the patient made an uninterrupted recovery.

The work of Führer and more recently Vartiainen has shown that eserine causes a very remarkable sensitisation of muscle to acetylcholine—presumably by the inhibition of choline esterase. The clinical application of this will be of interest.

I wish to thank Mr. A. J. Walton for permission to record the above cases.

THE PSYCHOTIC FORM OF ACUTE EPIDEMIC ENCEPHALITIS

CLINICO-PATHOLOGICAL REPORT OF A CASE

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Acute epidemic encephalitis is a disease so protean that an early diagnosis of the more irregular forms is a matter of some difficulty. The great variation in its symptoms is reflected in the more or less cumbrous classifications of its clinical manifestations, Osler in his text-book giving no less than 14 forms. Von Economo[1] classifies the symptoms into three basic groups — somnolent-ophthalmoplegic, hyperkinetic, and amyostatic-akinetic—and a fourth group of "irregular forms." In the latter he includes a purely "psychotic type," which, up to now, has been quite uncommon. It is of considerable interest, however, to the psychiatrist, in view of its resemblance to other acute mental disorders. In fact, one of the very first cases of encephalitis lethargica in 1916 was brought to the Vienna Psychiatric Clinic under the diagnosis of "amentia with hysterical attributes."

The following is an illustrative case which was admitted to the Cardiff City Mental Hospital with the symptoms of an acute psychosis.

A. B., aged 21, was admitted on Nov. 3rd, 1932, suffering from an acute confusional condition.

The family history showed nothing of note. On leaving school patient worked as a labourer until aged 18; subsequently as a milkman's assistant. No behaviour disorders or psychotic traits had ever been noticed in him. He was of a quiet and reserved disposition, fastidious in habits, and conscientious in his work.

Previous illnesses.—Patient suffered from a tuberculous hip as a child of 9, otherwise no illnesses. Of normal mental development.

History of present illness.—On Oct. 24th, 1932, he complained of headache and feverishness, but continued at his work until the 26th. On the following day he attended his family doctor, who diagnosed influenza and sent him to bed. He became depressed and emotional, complained of headache and abdominal pain, and was afraid to be left alone. On Oct. 29th the doctor called and diagnosed the case as "influenza with depression." He ordered rest in bed and fluid diet. The next day patient had improved and appeared almost his usual self, but two days later he again became depressed and apprehensive, and was apparently hallucinated, stating that he could see men fighting and hear them shouting. He was afraid to be left alone, as he thought people in the house opposite were going to murder him. On the next day he was more restless and excited. He rushed into the street shouting that someone had struck him, and that he was about to be killed. Shortly afterwards he was certified and sent to hospital.

CONDITION ON ADMISSION

The patient was of good physique. His appearance was toxic. No marks of injury. Temp., 98·6° F.; pulse, 110; resp., 18. Heart and lungs normal. The tongue was dry and furred. Sordes present on lips and teeth. Early pyorrhœa. Liver and spleen not enlarged.

Nervous system.—General restlessness. No involuntary movements. Slight degree of neck rigidity, but no Kernig's sign. Speech and gait normal. Cranial nerves normal. No nystagmus, diplopia, or ophthalmoplegia could be discovered during the whole course of the illness. Pupils moderately dilated, equal, and reacted well to light and accommodation. Sensation was difficult or impossible to test owing to complete lack of coöperation. He complained of headache and generalised pains in the chest and abdomen. The tendon reflexes were present and normal. The plantar reflex gave a flexor response on both sides; and the abdominal reflexes were all present.

Urine.—Acid. S.G. 1020. Urates. Trace of albumin; no other abnormal constituent.

Blood count.—Red cells, 7,470,000; white cells, 16,800; Hb, 100 per cent.; C.I., 0·73. Wassermann reaction negative.

Mental state.—The patient was admitted in an agitated and excited condition, struggling and shouting when receiving attention. He proved somewhat resistive to physical examination, shrieking out when touched that he was in agony and could not breathe. He stared about him wildly and at times jumped out of bed in a state of great agitation, probably seeking flight from terrifying hallucinations. Occasionally he was quite calm and controlled, and answered questions relevantly, but these lucid intervals were present only in the early stage. He was generally extremely noisy and restless, his talk frequently being accompanied by panting, grimacing, and wild gesticulations. He had to be fed and his habits were faulty.

The stream of talk was quite incoherent but accelerated. His incoherence at times amounted to verbigeration, and clang associations were abundant. His mood changed rapidly from noisy elation to terror-stricken fear, but during the intervals between his turbulent outbursts he appeared calm and indifferent. His endeavours to explain himself were largely confused, but he appeared chiefly preoccupied with auditory and visual hallucinations of a persecutory nature. He heard voices threatening to strangle him, and was constantly seeking protection from visions of men who approached him with murderous intent. Owing to his confusion and clouding of consciousness he was disorientated and grossly amnesic, and mistook the identities of those around him.

PROGRESS OF THE CASE

He was put on a fluid diet, and was given saline and glucose enemata owing to the difficulties of feeding and lack of fluid intake (as shown by the relative polycythæmia). Morphia and hyoscine were given twice or thrice daily to combat the restlessness. He ran an irregular pyrexia; the temperature rose in the later stages to a maximum of 104·4° F., and the pulse steadily weakened in spite of all supporting treatment.

For a time the condition was regarded as a post-influenzal toxæmia, and the absence of definite neurological signs seemed to support this. In view, however, of the headache, delirium, and slight neck rigidity, a meningeal or cerebral infection was suspected, and on Nov. 11th a lumbar puncture was performed. The fluid escaped under increased pressure, was clear, and formed no coagulum on standing.

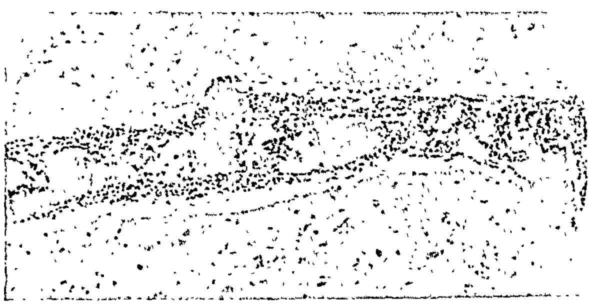
Cerebro-spinal fluid.—Cells: 38 per c.mm., mainly small lymphocytes; two or three large lymphocytes seen; no polymorphs. Ross-Jones test: positive. Acetic anhydride test: negative. Colloidal benzoin reaction: 0 0 1 1 1 2 2 2 2 2 0 0. No tubercle bacilli found. These findings, *in conjunction with the clinical picture*, indicated a diagnosis of an acute meningo-encephalitis.

On Nov. 11th the patient developed a terminal parotitis and he died on the following day.

PATHOLOGICAL FINDINGS

Naked-eye examination.—The meninges were congested, and the grey matter of the cerebrum showed distinct pink coloration.

Microscopic examination.—The pia-arachnoid showed a slight degree of infiltration with small round cells. The brain substance showed a well-marked inflammatory lesion characterised by cellular infiltration of the vessel sheaths, typical of that seen in acute epidemic encephalitis. The inflammatory cells were for the most part small and round with darkly staining nuclei. The lesions were confined to the grey matter and were most pronounced in the basal ganglia. The superior part of the optic thalamus in particular was very severely affected, while the inferior part showed only slight changes. The midbrain showed several foci of perivascular infiltration, but none of these affected the oculomotor nuclei. The medulla oblongata and the cervical region of the spinal cord showed no lesions. The frontal lobe of the cerebrum showed very marked perivascular infiltration both of vessels deep in the grey matter and also of the vessels near the surface, but those in the sulci were not affected. No lesions were found in any other part of the cerebral cortex.



Section showing perivascular infiltration in the deeper layers of the frontal cortex. (× 85.)

Clinically this case presented the features of an acute psychosis, resembling a toxic-exhaustive state. Neurological signs were absent, and the only clue to a correct diagnosis was the findings in the cerebro-spinal fluid. Psychotic forms of acute epidemic encephalitis are rare, and the pathological histology on this case has been fully investigated in order to determine whether there was anything in the distribution of the lesions to account for the unusual symptoms. The main abnormal feature was a marked involvement of the frontal lobes. This appears to be quite rare, as Boyd [2] found no such lesions in his series of cases, though Delater and Rouquier [3] report a psychotic case in which the pathological changes were confined to the cortex and meninges.

The extreme confusion, amnesia, and disorientation may possibly be accounted for by this cortical involvement, but the auditory and visual hallucinations could not be explained in the same way, for no lesions were found in the temporal and occipital lobes. The significance of the frontal involvement is thus not very apparent, for undoubtedly the clouding of consciousness, intellectual impairment, and hallucinosis could have been toxæmic in origin, which is usually the case in toxic-exhaustive states.

The severe spontaneous pains are readily explained by the intensity of the lesions in the thalamic region, and the absence of ophthalmoplegia and diplopia by the fact that, pathologically, the oculomotor nuclei were not involved.

The main difficulty in the diagnosis of this type of case lies in differentiating the acute illness from influenza, and the liability to mistake the psychosis for a post-influenzal toxæmic state. In this connexion the importance of examining the cerebro-spinal fluid can scarcely be overestimated.

We are indebted to Dr. P. K. McCowan, medical superintendent, *for permission to publish this case.*

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A CASE OF RETENTION OF URINE

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THE extraordinary degree of dilatation of the bladder makes the following case worthy of record.

A male African over 70 years of age and very senile in appearance was brought to hospital on Oct. 8th, 1932. He had not passed urine for four days and had been constipated for three days. He stated that he had always passed water three times daily until Oct. 4th, when he had awakened in the early morning and found himself unable to micturate. His general condition was weak, and his arteries were extremely tortuous. The heart-rhythm was slow, the sounds weak, and beats were frequently but irregularly missed. His abdomen showed a tense uniform swelling, *ending abruptly in the lower part of the* epigastrium, giving a flat note on percussion and a fluid thrill. There was no subcutaneous œdema, and the absence of shock ruled out the possibility of rupture of the bladder. A large rubber catheter was passed, and 11 pints, 10 oz., of urine was slowly withdrawn; the tumour disappeared. The patient was given 1 c.cm. of pituitrin and kept warm. *A hot rectal saline relieved the* constipation.

The urine was slightly alkaline, paler than normal, turbid, and rapidly deposited a greyish-white collection of triple phosphate crystals and debris. Its specific gravity was 1010, and a well-marked cloud of albumin appeared on heating.

After the passage of the catheter the temperature rose gradually from normal to 101·6° F.; on the third day it fell to normal, but rose on successive days. On the fourth day the cardiac rhythm became steady at 80, incomplete heart-block being present, 1 : 4. Catheterisation had to be continued to empty the bladder, and 70 to 80 oz. of urine was collected daily. No general prostatic enlargement could be felt, but slight difficulty in introducing the catheter suggested an enlargement of the middle lobe pressing on the urethra. The patient was removed on the seventh day in a moribund condition.

The degree of distension in this case (11½ pints) indicates a pre-existing distensibility from chronic obstruction; the patient was too senile to be trusted about his previous history.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF MEDICINE

At a meeting of this section held on Nov. 28th, the chair was taken by Sir FARQUHAR BUZZARD, the president. A discussion on

The Prognosis of Peptic Ulcers

was opened by Dr. CHARLES BOLTON. The probability of permanent healing, he said, depended upon the stage in its life-history reached by the ulcer. An ulcer began as an acute lesion which had a strong tendency to heal, but sometimes became subacute or chronic owing to the circumstances of its position. Its tendency to heal then depended on its age. Its course might be interrupted by perforation or hæmorrhage. Acute ulcers undoubtedly healed in the great majority of cases; when experimentally produced, they invariably healed in three or four weeks provided the animal's health and gastric function were normal. Ulcers found in patients who had died of hæmorrhage were usually advanced in healing, and signs of healing were often seen in the ulcers of patients dead of acute infective disease. The only exception was the ulcer found in patients who died of acute streptococcal septicæmia within ten days. When acute ulcers were multiple the multiplicity was due to scars. The chief obstacle to healing was disordered gastric function. Infection might play a part, but there was no direct evidence of it. The disordered function led to delayed emptying and hyperacidity. Delayed healing could be produced artificially by constituting these conditions, but medical treatment directed to rectifying them resulted in healing of ulcers, and as they healed the emptying time was shortened and the acidity usually reduced. If all acute ulcers could be treated, healing would be invariable. Moreover, it had been shown experimentally that delayed emptying and hyperacidity converted acute into subacute ulcers.

The prognosis for subacute and chronic ulcers was not so good, but nevertheless the majority healed well. Scars were as frequently found as open ulcers at autopsies and operations, and the radiological signs disappeared under medical treatment in about 70 per cent., while the size of the ulcer was materially reduced in a further 10–20 per cent. Recurrence of symptoms was due to failure to heal, formation of a new ulcer, or possibly to the breaking down of the scar. The scar was less resistant than the normal stomach wall because the mucosa covering it was deformed, thin, elementary, and implanted on fibrous tissue poorly supplied with blood. The prognosis in these cases was unsatisfactory in proportion to the chronicity of the lesion. After from two to five years about half of them were probably healed. The part of surgery was to deal with recurring ulcers or ulcers that would not heal. A combination of medicine and surgery gave the best prognosis. The only scientific method of estimating prognosis was repeated radiological examination. The great majority of relapses occurred within two and a half years. If symptoms had been present less than a year half the cases would be cured, but after five years the percentage fell to 10. Ulcer cases were not treated early enough and thoroughly enough.

Dr. J. J. CONYBEARE pointed out that few ulcer cases had been observed over a long period, as the exact diagnosis was a matter of comparatively recent date. The prognosis for life was different from the prognosis for health. Certain complications of a peptic ulcer endangered life: perforation and hæmorrhage. The prognosis for survival after perforation had greatly improved in recent years; not more than 1 per cent. of cases of ulcer died from this cause. Hæmorrhage was much more frequent—between 10 and 20 per cent. perhaps—but the risk of death was small, about 2 per cent., so that about one ulcer patient in four hundred would die of bleeding. Death might also be due to malnutrition and cachexia associated with pyloric stenosis and followed by secondary infections like tuberculosis. Surgical treatment constituted the biggest risk to life; 20 to 30 per cent. of chronic ulcers came to operation and there was an operative mortality of 5–7 per cent. The net risk was a little over 1 per cent. Serious complications might follow operation, e.g., gastrojejunal ulcer and gastrocolic fistula. Carcinoma might develop in a peptic ulcer, but authorities varied considerably in their estimate of the risk. Clinically, however, the short history of gastric cancer did not usually suggest pre-existence of ulcer. In 100 cases of gastric ulcer, W. Alvarez, of the Mayo Clinic, had found 12 with symptoms for less than a year and 81 with symptoms for from two to forty years. In 100 cases of inoperable carcinoma the corresponding figures had been 67 and 21, and only 11 of the 21 had given a history in any way suggesting gastric ulcer. Dr. Conybeare felt that ulcer-cancer was relatively rare.

The prognosis as regards health was much less favourable. Immediate results of treatment were good, but the remote results were less satisfactory. Statistical studies showed that the longer the period of observation the fewer the permanent cures appeared. After four years about 50 per cent. had relapsed. In a series of 190 cases operated on between 1910 and 1915 at Guy's Hospital and traced between 1921 and 1933, 59 per cent. were cured or much improved up to eleven years, and up to twenty-three years after operation 55 per cent. had remained completely well. Only one case of gastric carcinoma occurred, and that was after twenty years of perfect health. Individual prognosis could be estimated on family history, personality, and chronicity of the ulcer. Chances of permanent cure varied inversely with the chronicity. Ulcers were at present rarely diagnosed and treated efficiently in their earlier stages. Elderly persons responded much less satisfactorily than the young. The patient must have enough strength of mind to forego many of the pleasures of life and alter many habits: smoking, alcohol, late nights, fatigue, irregular meals, and so on. To the "ulcer type" these restrictions were peculiarly irksome.

DUODENAL ULCERS

Mr. L. N. PYRAH spoke of subacute and chronic ulcers only. They frequently healed. He related the results of an inquiry into the after-history of cases which had been operated on at Leeds General Infirmary between 1922 and 1931. Grade I. patients were perfectly fit; Grade II. patients were almost fit, but occasionally had a little abdominal discomfort. In Grade III. were the patients who had considerable pain and restricted their diet, but who had no symptoms suggesting ulcer. In Grade IV. were those who appeared to have recurrence or some mechanical cause of pain. Many of them had had a symptom-free period, so that the results would have appeared much better if the investigation had been made earlier. Many recurrences occurred after more than two years. In 389 cases of duodenal ulcer treated by posterior gastro-jejunostomy, the results were unsatisfactory in 21 per cent. (Grades III. and IV.). This was much the most successful operation. Factors in producing bad results were: age (the young patient did much worse than the older one); sex (females being worse than males); length of history (but no general rule emerged from these figures); stenosis (the patient with stenosis was more likely to be relieved, but 10 per cent. of patients with stenosis did badly); and hyperacidity. There was a definite relationship between the emptying-time of the stomach and the results of operation; patients with a hypertonic, hyperacid, and rapidly emptying stomach did worse after gastro-enterostomy. Many surgeons, dissatisfied with the results of this operation, performed partial gastrectomy in order to remove the acid-bearing area; but those who did well after gastro-enterostomy did very well and could eat anything. Gastrectomy had a higher mortality and sometimes led to severe anæmia. Nevertheless partial gastrectomy had its uses in certain types of case. There was no single universal operation for duodenal ulcer; each case should be studied on its merits. Fewer ulcer cases had been sent to the surgeons in Leeds in recent years, but the number of operations for perforated ulcer had doubled. The total satisfactory results of partial gastrectomy for gastric ulcer in Leeds were about 90 per cent.

A STATISTICAL STUDY

Dr. A. M. COOKE reported on an examination of the records of between two and three thousand cases. Figures, he said, must be treated with considerable caution. At St. Thomas's Hospital only proved ulcers were classified as ulcer. During the years 1921–31 a total of 2517 cases had been admitted, with a death-rate of 8·9 per cent. Of 191 cases admitted as grave emergencies due to bleeding, during seven years, 24·1 per cent. had died. The alarming mortality was in the perforation group; 22·4 per cent. for gastric and 19·3 per cent. for duodenal ulcer. There was also a death-rate of 11·1 per cent. from gastro-jejunal ulcer. The surgeon was often asked to deal with a moribund patient for whom little could be done, and his bad results were not entirely his fault.

Cases admitted to hospital, as a class, represented the more serious and intractable type. Attending the gastric clinic at St. Thomas's were discharged cases and those not requiring admission. During five years over 700 cases had been collected, and these showed a mortality of less than 5 per cent. Only 2 patients had developed gastric cancer. Of 676 cases traced, 61·8 per cent. were in good health, 27·8 per cent. in fair health, and 4·9 per cent. in bad health, according to their own estimate of their state. The remaining 5·5 per cent. varied. More than half had had to be admitted at some time, 14 per cent. more than once. Among the dangers of gastric ulcer were deficiency diseases following a milk diet, and renal complications of alkalosis. Prognosis might be improved by early medical treatment followed by a permanent regular régime. Many relapses were associated with irregularity of meals. Three operations were particularly useful: suture of perforation, gastro-enterostomy, and partial gastrectomy for chronic cases which had failed to respond to medical treatment or gastro-enterostomy. Dr. Cooke concluded with a plea for the surgical treatment of hæmorrhage, from chronic gastric ulcer, before the patient became too ill to benefit.

SECTION OF EPIDEMIOLOGY

Dr. J. D. ROLLESTON delivered a presidential address to this section on Nov. 24th, choosing as his subject

The Small-pox Pandemic of 1870-74

Small-pox, he said, became epidemic in France in 1869, that is before the Franco-Prussian war, and by the end of 1870 it had spread over the whole country. Nearly 60 per cent. of infants were being vaccinated, but a third or more of the French were unprotected. For ten years there had been orders for vaccination and revaccination of the army, but they were not strictly enforced, and during the war, for want of time, recruits were not vaccinated at all. From the 600,000 French soldiers arose 125,000 small-pox cases with 23,470 deaths. In 1902 vaccination was ordered in the first year of life, with revaccination in the eleventh and twenty-first years, and in the late war only 26 cases of small-pox arose among French soldiers (and 44 among troops from overseas). In the whole of France the small-pox deaths in 1870–74 numbered between 60,000 and 90,000. Germany in 1870 was almost free of small-pox. Her army had been vaccinated and revaccinated compulsorily since 1835, and only 77 cases had come to notice in the 35 years. Cases increased after France was entered, but in all there were only 8465 cases in the German army, with 459 deaths. The Germans suffered more than the French from typhoid and dysentery, so their immunity from small-pox was not due merely to better hygiene. German civilians, not compulsorily vaccinated, suffered heavily, developing some 170,000 cases. Belgium, Switzerland, and England were infected by French refugees. In London 16,000 cases were received in the hospitals of the Metropolitan Asylums Board, as many in the voluntary hospitals and in infirmaries, and as many more were treated at home. In England the first compulsory vaccination Act had been passed in 1853, and although the country suffered severely in the pandemic, the incidence and fatality of small-pox would have been considerably higher had it not been for this Act. The lack of accommodation for small-pox cases in London at the onset of the epidemic led to the rapid opening of three hospitals by the Metropolitan Asylums Board, at Hampstead, Stockwell, and Homerton respectively. Although 16,000 cases were admitted to these hospitals during the epidemic this number represented only one-third of the number for which accommodation was required. The transport of the patients left much to be desired as an ambulance service had not yet been established. Nurses were seldom provided; in most cases the patients travelled alone and occasionally reached the hospital moribund or were accompanied by friends who were not always sober. The danger of a small-pox hospital to the neighbouring inhabitants, which formed the subject of Power's report to the local government board in the next decade, was denied by some authorities, such as Dr. A. Collie, the medical superintendent of the Homerton Hospital, and Dr. Stevenson, the medical officer of health for St. Pancras, but was vigorously asserted by others, and especially by the writer of an editorial in THE LANCET in 1871.

Dr. E. W. GOODALL pointed out that, although the ordinary support of vaccination was statistical, clinical evidence might be even more impressive. As a junior hospital officer he once received a case said to be scarlet fever, and being doubtful had isolated it in a side-room off a ward in which were 22 male scarlet fever cases. The case seemed perhaps to be in the prodromal stage of small-pox, with the very serious erysipelatoid rash, suggesting exalted virulence. In four hours he concluded that it was too near the scarlet fever cases, and had it removed. That case was dealt with by 26 of the staff of the hospital, all protected by vaccination, and none of them took the disease, but of the 22 men in the ward, exposed for only four hours, and then only indirectly by nurse or doctor contacts, seven, those least well protected by vaccination, developed small-pox.

Sir William Hamer said he had at times seen evidence of the aerial convection from small-pox hospitals.

BRITISH ORTHOPÆDIC ASSOCIATION

The annual general meeting of this association was held in Edinburgh on Nov. 24th and 25th, under the presidency of Mr. A. S. Blundell Bankart.

Calcium and Bone

Mr. D. M. Greig (Edinburgh), speaking on *acute osteomyelitis* and *repair of fracture*, said that bone was at the mercy of its blood-supply and was decalcified by the hyperæmia of infection, injury, neoplasm, and disuse. In acute osteomyelitis the liberated calcium was redeposited within the periosteum to form the new involucrum. The operation of diaphysectomy removed the available calcium and accounted for failure of bone regeneration; it should never be performed until the new bone was well developed. Similarly in fractures, calcium liberated from the broken surfaces was redeposited within the fracture hæmatoma.

Mr. R. I. Stirling (Edinburgh) said that "fracture serum" contained up to thirty times as much calcium as blood-serum; the calcium was dissolved out of the bone by the acidity of the serum which attained a maximum after five days, and returned to normal within twelve days. Experimental work showed that metal interfered with this normal acidity; the union of fractures was therefore delayed by plating. Ivory and beef-bone did not inhibit acidity; the reaction to stainless steel was not yet investigated. Experiments also showed that union was delayed by any injection of the fracture-hæmatoma or by tearing of its wall; this fact should be considered when treating any fracture by local anæsthesia, early deep massage, or operative reduction.

Mr. R. Watson Jones (Liverpool) said that if it was true that decalcification was due to acidity, the experimental observation that metal inhibited acidity was at variance with the clinical fact that metal (other than stainless steel) always decalcified adjacent bone. The important practical point was that hyperæmia caused decalcification, and if in a fracture the initial hyperæmia was perpetuated by the repeated trauma of inadequate immobilisation, by infection, or by the irritation of metal or ivory, there was excessive decalcification and delayed or non-union. The only important cause of non-union was inadequate immobilisation.

Mr. J. W. Struthers and Prof. Murray Drennan (Edinburgh) showed cases of *parathyroid osteodystrophia fibrosa*, and referred to the frequent delay in skeletal recalcification after removal of the parathyroid tumour.

Mr. C. P. Stewart (Edinburgh) said that calcium balance depended on three factors: calcium intake (diet and vitamin-D activity), parathyroid activity (mobilisation of calcium from the bones), and the rate of bone-cell proliferation (local phosphatase activity and hydrogen-ion concentration). The three factors were interrelated, but the first was of greatest importance in rickets and osteomalacia, the second in osteitis fibrosa, and the third in Paget's disease.

Prof. John Fraser (Edinburgh), discussing *lipoid granulomatosis* of bone, said that it was due to an error of lipoid metabolism accounting for excess of cholesterol, which was deposited in blood-vessels and led to granuloma formation. Symptoms were due to local pressure effects, and included diabetes insipidus from pituitary involvement, loosening of the teeth, and extensive bone decalcification. The bone condition was to be differentiated from neoplasm and gumma, and responded well to deep X ray therapy.

Congenital Abnormalities

Mr. J. Bruce (Edinburgh) traced the evolution of the foot and said that congenital *anomalies of the first metatarsal*, including shortening, abnormal varus position, and undue mobility, predisposed to strain of the other metatarsals. Compensation of the increased load caused subperiosteal thickening of the metatarsal shafts (Deutschlander's disease). Decomposition resulted in metatarsalgia, spontaneous or "march fracture" of the metatarsal neck, and Köhler's or Freiberg's disease of the metatarsal head. The recent calamitous report of a case in which march fracture was mistaken for sarcoma and the leg was amputated emphasised the necessity for recognition of these disorders.

Mr. Stewart Middleton (Edinburgh), speaking on *arthrogryposis multiplex congenita*, said that in this condition the skeletal muscles were replaced by connective tissue, and the resulting muscle-shortening caused deformities which were very difficult to correct, but had little tendency to relapse. Investigation of experimental herds of sheep in which the disorder was inbred showed that the muscles developed normally but underwent secondary degeneration before birth of the lamb. It was therefore an intra-uterine muscular dystrophy, and he suggested for it the name "myodystrophia fœtalis deformans."

Mr. Bryan McFarland (Liverpool) said that in human cases there were three objections to the theory of muscular dystrophy: first, there was no progression after birth; secondly, there was rarely any family history; and thirdly, the condition could occur in one limb, the child being otherwise normal.

Mr. Middleton, in reply to the President, said that there was no evidence of a primary neurological lesion.

Sciatica and Low Back Pain

Mr. W. A. Cochrane (Edinburgh), reporting the results of dissection of the lumbosacral plexus and the lumbar vertebræ, pointed out that a high or prefixed plexus predisposed to stretching of the nerves. He postulated that the coincidence of such an anatomical variation with an extra presacral vertebra, or with sacralisation of the fifth lumbar transverse process, might explain cases of sciatica.

Mr. Watson Jones said that anomalies of the lumbar vertebræ were rarely found in sciatica, but muscle spasm, lumbar rigidity, and scoliosis were very common. Treatment by spinal manipulation failed in at least 40 per cent. of cases, but immobilisation by a head-suspension plaster jacket invariably gave relief.

The President said that half the cases of sciatic scoliosis could be cured by manipulation. He had occasionally exposed the interarticular joints by operation, and found the nerve-roots to be very closely in contact with the joints.

Mr. Walter Mercer (Edinburgh) described an operation for excision of the fifth lumbar transverse process by an anterior extraperitoneal approach. The bone was much more easily exposed and removed in this way than by the usual posterior approach.

Fractures and Dislocations

Mr. H. O. CLARKE (Manchester) reported 87 recent fractures of the *carpal scaphoid* treated by immobilisation for periods up to nine months. Bony union was secured in 80 per cent. of cases. Of ten neglected recent fractures (one to three months' duration) treated conservatively, only one united by bone. In such cases he advocated refreshening of the fractured surfaces by operation followed by prolonged immobilisation. If the fracture remained ununited, arthritis of the wrist which could not be relieved by any operation invariably developed.

Mr. ALAN TODD (London) advocated excision of the whole proximal row of carpal bones for old ununited fractures with arthritis of the wrist.

Mr. W. H. TRETHOWAN (London) reported a case of "osteochondritis dissecans of the scaphoid."

Mr. N. DOTT and Mr. STIRLING (Edinburgh) advocated manipulative reduction of *congenital dislocation of the hip*, but said that repeated manipulations impaired the end-result. In cases where the upper lip of the acetabulum was under-developed, they made a new lip by open operation at an early age instead of waiting for redislocation.

MANCHESTER MEDICAL SOCIETY

A MEETING of this society was held on Nov. 1st, with Dr. C. PAGET LAPAGE, the president, in the chair.

Empyema

Dr. H. T. ASHBY read a paper on the treatment of *empyema in children from a physician's point of view*. In childhood, he said, empyema must always be considered with pneumonia, since it rarely follows any other disease. It may follow either alveolar pneumonia or broncho-pneumonia. It is hard to say in what proportion of pneumonias empyema develops, but it is roughly 10 to 12 per cent. The diagnosis is often difficult and the physical signs misleading, but if there is any chance of pus being present in the chest exploration should be done. Radiography is often a help, especially when the empyema is localised or interlobar. In treatment it is important to distinguish between the two types—the syn-pneumonic and the meta-pneumonic. The former is a complication of the pneumonia and arises while the pneumonia is still active. This type commonly follows broncho-pneumonia, especially during an influenza epidemic. Pus forms with great rapidity. In these cases aspiration only should be done, no open operation being attempted until the pneumonia has settled. Meta-pneumonic empyema ought to be operated on as soon as possible. Rib-resection is the best operation, and a tube of adequate size should be inserted. A subsequent rise of temperature generally means insufficient drainage. The continuous suction drainage method is difficult to keep up efficiently. Empyema in infancy is always very serious, but of late improved results have been obtained by injecting Optochin into the pleural cavity after the pus has been aspirated.

Gallop Rhythm

Dr. J. CRIGHTON BRAMWELL described the clinical features of a consecutive series of 50 patients who exhibited gallop rhythm. Of these 35 had died, 13 were still alive, and 2 had been lost sight of. All except 3 were over forty years of age; and males preponderated over females in the proportion to four to one. Sixty per cent. had a systolic blood pressure of over 160, and of 12 patients whose systolic pressure was below 135, 9 were suffering from myocardial infarction following coronary occlusion. Half the patients in this group were suffering from essential hypertension or chronic Bright's disease. Signs of congestive heart failure were present in 23 cases, and 10 of the patients had complained of cardiac asthma. None had auricular fibrillation. In describing some experimental observations he had made, Dr. Bramwell pointed out that the accessory sound and impulse in true gallop rhythm are always associated with auricular systole. He then discussed the part normally played by the auricle in filling the ventricle. When the heart is beating slowly, he said, ventricular filling takes place chiefly during the first and last phases of diastole; but when the heart-rate is more rapid auricular systole occurs early in diastole. This gives rise to an unusually rapid rate of ventricular filling, and, in patients whose ventricular muscle is lacking in tone, produces a sudden distension of the ventricle and sets the ventricular walls into vibration. These two phenomena are, in his opinion, responsible for producing the impulse and additional sound characteristic of gallop rhythm.

ULSTER MEDICAL SOCIETY

AT a meeting of this society held on Nov. 16th, Dr. S. B. BOYD CAMPBELL and Dr. T. H. CROZIER reviewed a series of 1153 cases of

Cardiovascular Disease

These cases comprised all those admitted to the Royal Victoria Hospital, Belfast, over a period of five years. They were systematically investigated as regards ætiology, symptoms, type of lesion, and result of treatment. The infective group (674 cases) was the largest; in it were included rheumatism, syphilis, and subacute bacterial endocarditis. It was of interest to note that there was no history of former acute or subacute rheumatism, tonsillitis, or chorea in 10 per cent. of the cases under the age of 30. Acute rheumatic fever appears to be still a fairly common disease in Belfast and the North of Ireland. Large doses of salicylates and aspirin alternately were advocated in its treatment. If the temperature and joint pains did not rapidly subside the diagnosis should be reconsidered. Speaking of the value of tonsillectomy, Dr. Boyd Campbell said he was favourably impressed by the results in suitable cases of rheumatic endocarditis. Cases had been reported of serious results following the removal of a septic focus such as a tooth and the tonsils, but these dangers had been exaggerated. Of the syphilitic cases, 84·5 per cent. were found between the ages of 40 and 60. Treatment was first given with iodides and mercury, and followed by intravenous injections of arsenic. Smaller doses (0·3–0·45 g. Novarsenobillon) were used in Belfast than at some hospitals, and the results seemed to compare favourably. Prolonged rest in bed for two to three months was also often necessary.

Dr. Crozier gave a description of the statistical tables which had been drawn up from the records, and referred to the use of quinidine in the treatment of auricular fibrillation. A difficulty was to find cases suitable for its use. He seldom met with cases of short duration and with few or no signs of serious cardiac disease.

In the discussion which followed, Prof. W. W. D. THOMSON agreed as to the use of morphia in cardiac disease, particularly coronary thrombosis, on which the opening speakers had laid stress.

REVIEWS AND NOTICES OF BOOKS

Otosclerosis

By Macleod Yearsley, F.R.C.S., formerly Consulting Aural Surgeon to the St. James's Hospital; and Senior Surgeon to the Royal Ear Hospital. London: John Bale, Sons and Danielsson, Ltd. 1933. Pp. 88. 8s.

Mr. Yearsley gives, in the first six chapters of this little book, a useful and succinct account of the ideas of numerous authorities about this puzzling affection and states their various views of its pathology and causation. His own theories are set out in the two final chapters. It is his opinion that the clinical and pathological facts of otosclerosis indicate that the disease begins in the brain rather than in the middle ear and labyrinthine capsule, and that there is good presumptive evidence for the hypothesis that the primary and essential changes of otosclerosis are to be found rather in the cortex of the temporo-sphenoidal lobe than in the ear. He admits, however, that no investigations have so far been prosecuted as to the condition of the cortical or other centres in the brain which are involved by this hypothesis, and it is clear that an essential part of the proof is wanting. Under these circumstances the second part of his thesis is of more immediate and practical importance.

Many observers have laid stress on a belief in the necessity for an active agent, usually infective in nature, to start the train of changes characteristic of otosclerosis, and Mr. Yearsley considers that this agent is chronic intestinal toxæmia. Among 100 consecutive cases he found this condition in 83, of which 74 suffered from habitual constipation. He points out that this toxæmia may be hereditary. In his opinion, it is also a cause of chronic progressive deafness of middle age, of presbyacusis, and of sporadic and congenital deaf-birth. During the past few years he has examined many "sporadic" congenital deaf-mutes, and found over 50 per cent. in whom, and also in their mothers, definite evidence of chronic intestinal toxæmia was present.

In the treatment of otosclerosis he holds that measures designed to combat the chronic intestinal toxæmia must be thorough; he has no use for the Plombière method, but employs high lavage of the colon, vaccines, and a preparation of the lactic acid bacillus with the regular use of a purgative. The diet must be frugal, and butcher's meat and eggs avoided. In local treatment Mr. Yearsley puts his faith in the electrophonoide, of which he is well known as an advocate; a course of 30 sittings, followed after an interval of six weeks by a second course of 20 sittings, and by further courses at varying intervals, is recommended, and speaking generally the treatment should cover a period of one or two years. Regular listening exercises are also held to be of value. Mr. Yearsley has treated 30 otosclerotic patients on these lines, and obtained very marked improvement in 13. He gives details of 6 of these 13 patients in an appendix; 4 of them are still under treatment, and were not seen until 1932; it would be valuable to learn the results of longer observation.

Chronic intestinal toxæmia may be a factor of greater importance than has been recognised, in which case Mr. Yearsley will have done good service in drawing attention to it. The arguments with which he closes this interesting volume should receive the attention for which they call. But the thesis is not an easy one to deal with.

The Practice of Surgery

Fourth edition. By Russell Howard, C.B.E., M.S., F.R.C.S., Surgeon, London Hospital; Senior Surgeon, Poplar Hospital; and Alan Perry, M.S., F.R.C.S., Surgeon, London Hospital and Poplar Hospital. London: Edward Arnold and Co. 1933. Pp. 1338. 30s.

This text-book, now in its fourth edition, is unlike many long popular manuals in that it has not passed through the hands of successive authors. Mr. Perry has caught the spirit of the first edition and has conformed to the original conception with extraordinary skill, so that the book still possesses a unity which is very pleasant in these days of composite authorship. Another satisfactory feature is that the section on diseases of the nose, throat, and ear is not handed over to a specialist for detailed treatment, but the fundamental points to be remembered in this branch of surgery are noted in a short simple statement. Most recent advances in surgery receive mention, such as the ketogenic diet in pyelitis and the perurethral treatment of enlargement of the prostate; we could not find any account of the surgery of bronchiectasis or of sympathetic ganglionectomy. In the treatment of fractures of the lower end of the humerus the student should be told to differentiate between those in children and those in adults. Movement and massage at the end of a week are not indicated in children. Sayre's uncomfortable method of treating a fractured clavicle might have been omitted. The transport of patients with fractured spines is better done in the prone position than supine on a board as recommended. The treatment of such injuries by applying a plaster jacket with the patient suspended face downwards is so successful that a place should be found for it in text-books.

It is a tribute to the care in revision and compilation that so little matter for criticism can be discovered. The book will appeal to a large circle of students because of its simplicity and reasonableness, and because it bears the impress of a great teacher of surgery.

The Order of the Hospital of St. John of Jerusalem

By H. W. Fincham, F.S.A., Knight of Grace of the Order. London: The Grand Priory of the Order. 1933. Pp. 86. Cloth, 7s. 6d.; paper 3s. 6d.

This story of the Order of the Hospital of St. John of Jerusalem and its Grand Priory of England—to give the institution its full title—is written by the curator of the museum of the Order, who is warden of the Priory church in Clerkenwell and assistant librarian. So from many aspects Mr. Fincham is a well-qualified chronicler. He goes over the ground covered by his previous work under the same title, published nearly 20 years ago and now out of print, but adds full descriptions of important acquisitions to the church and museum which have deepened interest in the ancient buildings. His history of the Order should clear up confusion as to its origin, which, perhaps, would not exist if the familiar title "Knights Hospitallers" were employed, for, in contradistinction to the Knights Templar, the Teutonic Knights, and other knightly Orders, the Order of St. John of Jerusalem was definitely founded with the intention of giving aid to the sick and wounded. There is evidence from various sources that in Jerusalem, after the acceptance of the Christian doctrines by the Roman Empire, a hospital came into being which was served by a Brotherhood and which, although Christian in origin and doctrine, was respected by the followers of Mahomet. This institution was found in working order by the Crusaders in the eleventh century, and when Godefroy de Bouillon's expedition captured the city, the Brotherhood responsible for the working of the hospital became to this extent military that, in order to minister to the medical needs of the pilgrims to Jerusalem, they fortified and guarded various places along the routes which the pilgrims travelled.

During the 300 years after the first crusade the Hospitallers developed, almost in spite of themselves, the position of a military Order, for in various contests with the Turks, and under various expulsions and refoundations, it was their military prowess that kept them in being. And so in Rhodes, Messina, and finally Malta they built their fortresses, and in Valetta to-day we see the finest and final example of the Hospitallers as a military Order on the Continent. A branch of the Order in England was founded in 1130, acquired much wealth, underwent political vicissitudes, was granted charters and privileges, succeeded to the property in England and Scotland of the Knights Templar, and was under royal patronage until the suppression of the Order by Henry VIII., and the flight of the English Knights to the centre in Malta. At the time of their greatest importance and wealth in England the Priory at Clerkenwell was a scene of royal entertainment, but of the splendid buildings very little remains with the exception of the crypt beneath the choir and a fragment of the round nave of the church. Mr. Fincham says that most of the representations of the buildings found in books are fictitious, although he considers that a print by Wenceslaus Hollar, reproduced in this volume and dated 1656, may be taken as fairly accurate, although it must have been executed 100 years after the dissolution of the Priory, and when most of the buildings had disappeared. Clear descriptions of the fascinating remains are given with illustrations of the buildings and their adornments, and piquant little historical episodes are recounted associated with them. The Order was revived in 1831 in England, and its modern activities are not recorded by the author. They are elsewhere written and familiar to all.

This beautifully produced volume should, for its historical and archæological interest, have an appeal larger than its title suggests.

Journal of Pathology and Bacteriology

THE following papers are discussed in the issue of November, 1933 (Vol. XXXVII., No. 3).—Anaerobic Methods for the Identification of Hæmolytic Streptococci, by R. M. Fry (London). Hæmolytic streptococci produce occasional variants which show hæmolysis only under anaerobic conditions.—A Simple Method for the Preparation of the Specific Soluble Substance of Type I. Pneumococcus, by H. W. Dudley and W. Smith (London).—The Serological Grouping of the Starch-fermenting Strains of *Corynebacterium diphtheriæ*, by Jean Orr Ewing (Oxford). Agglutination distinguishes five types in the starch-fermenting group, all different from those which do not ferment starch.—The Antihæmolytic Titre of Sera of Man and Animals following Staphylococcal Infection, by J. I. Connor and Margot McKie (Melbourne). Memorable infections tend to raise the content of the serum in antihæmolysin beyond that found in the general population.—Further Observations on the Specificity of the Bactericidal Properties of Normal Serum, by M. H. Finkelstein (Edinburgh). Suspensions of bacteria may contain a non-specific substance which inhibits the specific bactericidal actions of normal sera.—The Bactericidal Power of Normal Serum, by J. Gordon (Leeds). Normal bactericidins are not specific.—The Size of the Virus of Louping-ill of Sheep by the Method of Ultrafiltration Analysis, by W. J. Elford and I. A. Galloway (London). About 15–20 micromillimetres, not much larger than the virus of foot-and-mouth disease.—The Growth Phases of Pleuro-pneumonia and Agalactia on Liquid and Solid Media, by J. C. G. Ledingham (London). A complex life-history places these microbes among the actinomycetales.—The Leucocytes of the Pigeon with special reference to a diurnal rhythm, by A. F. B. Shaw (Cairo). The neutrophil of man and the higher apes is replaced by the pseudo-eosinophil with crystalloids in the cytoplasm; these are subject to a diurnal rhythm (highest during the afternoon) similar to that seen in man.—The Functions of Brunner's Glands and the Pyloric End of the Stomach, by H. W. Florey and H. E. Harding (Sheffield). Brunner's glands produce a very alkaline thick mucous secretion which protects the duodenum from the acid gastric juice.—Massive Paravertebral Heterotopia of Bone-marrow in a Case of Acholuric Jaundice, by S. J. Hartfall and M. J. Stewart (Leeds). One of the rare exceptions to the rule that human bone-marrow is enclosed in bone.—Intracranial Tuberculoma, by H. G. Garland and G. Armitage (Leeds). Of 264 intracranial tumours seen *post mortem*, 34 per cent. were tuberculous; surgeons find about 3 per cent. because tuberculomata rarely cause symptoms before the onset of tuberculous meningitis.—The Islands of Langerhans in 19 Cases of Obesity, by R. F. Ogilvie (Edinburgh). Generally larger than in normal subjects.—The Influence of Sodium Lactate in the Production of Green Discoloration (H_2O_2 formation) by Streptococci, by J. Gordon (Leeds).—Renal Aplasia in an Infant, by J. W. S. Blacklock (Glasgow). A female child lived 25 days with kidneys about the size of small beans and histologically undeveloped.—Kidney with Lymphoid Tissue in its substance, by J. W. S. Blacklock (Glasgow). In a child of 18 months.—Pathological Changes observed in Paralysis of the Landry Type: a contribution to the Histology of Neuro-paralytic Accidents complicating Antirabic Treatment, by S. Getzowa, G. Stuart, and K. S. Krikorian (Jerusalem). In two cases following antirabic treatment and one of unknown origin, a widespread degeneration of ganglion cells was found without any inflammatory lesions or fibre destruction.

The Fight against Disease

THE autumn issue of the QUARTERLY JOURNAL OF THE RESEARCH DEFENCE SOCIETY (Vol. XXI., No. 4), which can be obtained from the Research Defence Society or from Messrs. Macmillan and Co., London, W.C., contains an interesting article on the annual returns of the Home Office under what is popularly known as the Vivisection Act. A summarising table is included of the Home Office returns under the Act for the years 1928–32 inclusive, and in the face of the details therein given the statements of those who oppose the cause of research must seem surprising. Correspondence between the Society and Mr. Alexis Gunning is also published which is worth reading as showing what the antivivisectionist holds as "the real truth." Mr. Gunning's approaches to the Society are full of courtesy, but his statements in the lay press contain general accusations against laboratories which reveal both ignorance and credulity.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE (November, Vol. XXVII., No. 1).—An alteration has been introduced in the journal commencing with this number consisting of a different arrangement of the table of contents. The contents will now be arranged according to "papers," "short communications," and "clinical material" instead of under sections as was previously the case. Following this the page numbers are given referring to the report of any special committee and any secretarial announcement. It is also stated that whenever an abstract of a paper is supplied by the author, it will be printed at the head of the paper in English, French, and German for the assistance of continental readers.

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THE LANCET

LONDON: SATURDAY, DECEMBER 2, 1933

NEW WORK ON THE PARATHYROIDS

It is almost exactly a hundred years since Raynard, a veterinary surgeon at Lyons, discovered that removal of the thyroid gland in dogs was rapidly fatal. Fifty years later Schiff showed that while this was true of cats as well as dogs, it was not true of rabbits and rats. In 1880 Sandström, of Upsala, first described the parathyroid bodies and their position in man, and also in dogs and cats and in rabbits, oxen, and horses. The superior pair only was seen by him; 15 years later, in 1895, Kohn discovered the inferior pair. These are embedded in the thyroid body and so differ from the superior pair, which lie on the surface of the gland—usually within its capsule—in dogs and cats, whereas in herbivora they are at some little distance from the gland. Already, in 1891, Gley had explained the difference in the results of thyroidectomy in carnivorous and herbivorous animals which Schiff had observed; in the dog and cat the operation had removed the parathyroids, in the rabbit and rat it had not. The final proof that the acute symptoms set up by thyroidectomy in dogs were due to removal of the parathyroids was furnished in 1900 by Vassale and Generali, who removed the parathyroids so as to leave most of the thyroid. It was generally 48 hours before any symptoms appeared; then twitchings and spasms and other neuromuscular phenomena began and in a few days, generally within a week of the operation, the animals died. The symptoms could be prevented by implantation of parathyroid glands and would return on removal of the graft. The latent period before the onset of symptoms suggested that time was necessary for some poisonous product of metabolism to accumulate in sufficient amount and that the presence of the parathyroids in normal animals prevented this accumulation by destroying the poison. The fact that the severity of the symptoms varies with the activity of protein metabolism seemed to support this idea. They were more severe if the animals were given meat to eat in quantity, less severe if they were not fed at all; they were worse in young growing animals than in those fully grown; they were relieved by bleeding and replacement of the blood by saline. When therefore guanidine and methyl-guanidine were found by Koch in 1912 in the urine of such animals and also of patients suffering from idiopathic tetany, and were shown to cause symptoms similar to those produced by parathyroidectomy, it was held by some that the poisonous product of protein metabolism which was responsible had been identified (Burns and Paton, 1915).

Meanwhile another and independent discovery was made by MacCallum in 1909: parathyroidectomy causes a shortage of calcium in the blood and brain, and the symptoms it sets up, and those of tetany too, can be stopped by injecting calcium salt. And ever since Collip in 1925 succeeded in preparing from the parathyroid glands a material whose injection causes an increase of 50 per cent. or more in the blood calcium, and especially since this material has been on the market as Parathormone, attention has been concentrated on the influence which these small glands have upon the quantity of calcium in circulation. The tetany associated with alkalosis brought on by merely breathing deeply enough to remove significant amounts of carbonic acid, though it does not lower the concentration of calcium in the blood, diminishes the amount of it which is ionised. Similarly in gastric tetany brought on by persistent vomiting and consequent loss of acid the amount of calcium in the blood is not lowered but there is a definite reduction in the amount of essential calcium ion. The parathyroids are necessary because they maintain a sufficient concentration of ionised calcium—not by retaining it and preventing its excretion, but by drawing on the supplies of calcium in the body. The abnormal activity of the gland when irritated by tumour growth is associated with osteoporosis and fragility of the bones, and the condition called osteitis fibrosa presents many of the symptoms of increased parathyroid activity.[1]

But what apparently is a totally different function of the parathyroid has now been discovered by Dr. C. G. Imrie and those working with him at Sheffield, Dr. Marion Brown and Dr. Constance Jenkinson. With Dr. Brown he began by studying the relation between the amounts of creatine and of phosphoric acid which are combined in muscle—the combination which under the name of phosphagen has come to take so important a place in the chemistry of muscular contraction. By administering creatine to cats the quantity of phosphoric acid which could be recovered from their muscles was increased. It appears therefore that the administration of creatine increases the amount of phosphagen in muscle; but the phosphoric acid necessary for making this extra phosphagen is supplied by the body, so that less phosphate is excreted in the urine. Since the parathyroid in its influence over the distribution of calcium also affects that of phosphoric acid (bone contains more than four times as much calcium as phosphorus, so the change is less conspicuous), the investigators next examined the effect of parathyroid extract on the fixation of creatine in the muscles. The extract by itself does not increase the amount of phosphagen in muscle, nor does it reduce the output of phosphates in the urine; if creatine is given with it, however, not only is more of the labile compound that is or behaves like phosphagen found in the muscles, but the retention of phosphate becomes so pronounced that none at all is found in the urine for several hours. If on the other hand the parathyroids are excised, the amount of phosphagen in the muscles is only half what it is in normal animals. This is not due to lack of phosphoric acid, for the amount of free phosphoric acid in the muscles after excision of the parathyroids is correspondingly increased. But the presence of these glands seems to be necessary for its combination with creatine.

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[1] For a review of this subject see THE LANCET, Sept. 2nd, 1933, p. 547.

Phosphagen is broken down when muscle contracts and the energy liberated is that which is immediately concerned in the energy of contraction. During recovery the phosphagen is reformed, and the influence of the parathyroid on this reformation has been studied by IMRIE and JENKINSON.[2] They find that if the sciatic nerve is tetanised for twenty minutes the excited muscles lose half their phosphagen, but the corresponding amount of additional free phosphoric acid remains in them. In the course of the next hour the phosphagen is gradually reformed and both it and the free phosphoric acid return to their normal values. In cats with tetany following removal of the parathyroids, the amount of phosphagen is to start with 20 per cent. below normal and after stimulation of the motor nerves half the remaining phosphagen is broken down as in normal animals; but after this, even after three hours for recovery, very little of the phosphagen is reformed and very little less free phosphoric acid is to be found. If on the other hand, after removal of the parathyroids, the animal is treated with the active extract of the glands it has the normal amount of phosphagen in its muscles and when this has been reduced by stimulation of the motor nerves it is reformed within an hour as in normal animals. This effect of the extract is detectable after a few hours, so that in one and the same animal tetanic symptoms have been induced by removal of the parathyroids, when it is possible to show first the loss of the power to reform phosphagen and then, five or six hours later, after a dose of the extract, complete recovery of this power.

The rôle of phosphagen in the physiology of muscular contraction seems to be very important, and the influence of the parathyroids upon its formation can hardly be less important. The connexion between this property and the more familiar function of regulating the distribution of calcium, if there is any connexion, is not yet evident. There are grounds for associating the tetany that follows loss of the parathyroids with the resulting low calcium content of the blood; J. LOEB more than thirty years ago showed that the injection of any salt which precipitated calcium leads to twitching of the muscles. But it would be remarkable if the muscular symptoms were not associated also with the impaired formation of the chemical substance which is so closely concerned with the normal function of the muscles. As a matter of fact, cats, the animals with which IMRIE's work was done, are said as a result of experiments in COLLIP's laboratory to show little or nothing of the rise in serum calcium which is seen in dogs treated with the active extract. (After parathyroidectomy they may do so.) It remains to be seen therefore whether the influence of the parathyroids on phosphagen-formation can be demonstrated in other species. The results so far obtained arouse speculation whether it is merely coincidence that methyl-guanidine has been regarded as the toxic agent responsible for the symptoms set up by the loss of these glands and that the new property which has been found in them is concerned with the compound of methyl-guanidine with acetic acid, namely, creatine. We understand that Dr. IMRIE is now endeavouring to apply his data to problems in clinical medicine, and it will be interesting to hear what success he has.

SURGERY OF THE LUNG

WHEN surgery has scored some notable successes in face of medical failure the tendency for a time is towards rapid surgical progress. Such a tendency is now conspicuous in the treatment of pulmonary diseases. By years of endeavour the 10- to 11-rib extrapleural paravertebral thoracoplasty was so far perfected that it came to rank as a standard operation for a certain group of cases. No sooner had this stage been reached than various surgeons began to apply their experience to a further reduction of the mortality and to a stricter limitation of the operation. The earlier results of the localised apical thoracoplasties were somewhat disappointing because collapse of the upper ribs was hindered by the rigid arching of the lower. This was especially evident when large tuberculous cavities had to be collapsed. Further experience showed, however, that by increasing the length of bone resected from each of the upper ribs, a very extensive apical collapse could be secured without grossly impairing the function of the lower lobe.

It was natural to hope that equally good results would be obtained in bronchiectasis, but efforts in this direction proved discouraging, especially when the larger bronchi or the lower lobe were involved. By this time, however, thoracic surgery had received its impetus, and bolder methods such as the excision of the affected lobe or lobes seemed to offer a possible means of curing the disease. At first there were some brilliant results, but a mortality of 50 per cent. seemed much too high for any but the most daring. The idea of lobectomy was right, but the technique required a great deal of improvement. How far this improvement has been attained in the last few years may be gathered from a paper lately written by Mr. J. E. H. ROBERTS and Mr. H. P. NELSON,[1] of St. Bartholomew's Hospital. Using a technique slightly modified from that advocated by BRUNN and further elaborated by SHENSTONE and JANES, they performed lobectomy in ten cases during the eight months May to December, 1932. The condition of their patients in May, 1933, was a striking testimony to the progress that has been made. To take the possible failures first, one patient died after ten days from a cerebral abscess, but the post-mortem examination gave justifiable grounds for assuming that this had started to develop before the operation. A second died three months after the lobectomy from an influenzal pneumonia. Of the remaining eight, six were healed and free from symptoms, while the other two were back at work, though not entirely cured. The lobectomy in eight of these ten cases was done for bronchiectasis and in the remaining two for carcinoma. ROBERTS and NELSON are strong supporters of the one-stage operation, in which the lobe is cut away and the stump is closed by sutures, as opposed to the two-stage in which the lobe separates as a result of strangulation. One of the great difficulties in lobectomy is the limitation of the infection, and this is effected in the one-stage operation by completely closing the chest wall after the insertion of an air-tight drain into the base of the pleural cavity. This drain is connected by a tube which opens under water in a Woulfe's bottle. The negative pressure in the chest causes the remaining lobe, or lobes, to re-expand and gradually fill up the whole pleural space. The one-stage lobectomy is, moreover, a more truly surgical operation than the two-stage, which necessitates waiting for the lobe to separate by sloughing.

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[2] Jour. of Physiol., 1933, lxxix., 218.

[1] Brit. Jour. Surg., October, 1933, p. 277.

An even more remarkable achievement is reported by EVARTS GRAHAM and J. J. SINGER,[2] who have successfully removed an entire left lung together with several mediastinal tracheo-bronchial glands. In this case the patient had a squamous carcinoma of the bronchus of the upper lobe which projected slightly into the bronchus of the lower lobe. Not only were the whole lung and the glands removed at one stage, but in addition, seven ribs, from the third to the ninth inclusive, were resected from the transverse processes to the anterior axillary line. This was done in order that the soft tissues of the chest wall could collapse against the stump to obliterate, so far as possible, the pleural cavity. Although a small empyema developed in the upper part of the cavity, the wounds were all healed in three weeks. The latest report, four and a half months after the operation, was very satisfactory.

In considering the brilliance of these results—and they are very brilliant—one must be grateful also for the steady advance in methods of anæsthesia. This has done much to enlarge the sphere of surgery; and it will do more.

VITAMINS IN MILK

THE general opinion that cow's milk is, on the whole, rather a poor source of vitamins is contested by Prof. H. C. SHERMAN in a paper read at the recent annual meeting of the American Public Health Association at Indianapolis.[3] Vitamin A, he points out, is excreted in the milk with remarkable constancy. Provided that it has been previously well fed, a cow may continue to supply vitamin A in normal quantity to her milk from her bodily store even during many months of subsistence on a diet poor in this vitamin. The high survival value for the species of vitamin A supports the view that evolution has in some measure stabilised the vitamin-A content of milk, and that it has further provided for the maintenance of relative constancy in this respect by the development of the body's capacity to store this vitamin in times of abundant intake and to furnish it to the milk from this store when the intake is low. While the vitamin-A content of the milk may be raised by the feeding of cod-liver oil, fresh pasture, or kale, the vitamin-B content is "under physiological control," in the sense that it cannot readily be raised above a normal value by the feeding of more vitamin to the cow, and that when this factor in the milk has been artificially lowered by the feeding of rations very poor in vitamin B, the normal vitamin-B value of the milk is quickly regained as soon as the cow is again placed on a satisfactory diet. The same holds true of vitamin C. Though milk is not an outstandingly rich source of either of these vitamins, it appears to be a more constant and reliable source than has hitherto been appreciated.

The methods of testing milk for vitamin-D values have hitherto involved the employment of experimental diets of such drastic rickets-producing character that only fairly high antirachitic potencies have been demonstrable. With the use of more delicate methods it is now being found that several foods including milk are more important sources of vitamin D than previous work has indicated. It still remains true, however, that in northern latitudes and in cities where the antirachitic value of sunlight is greatly diminished by smokiness of the atmosphere, it is to the advantage of the infant, and possibly of older persons as well, to receive more vitamin D than cow's milk as commonly produced can be depended upon to supply. For this reason a considerable amount of attention is being directed to increasing the vitamin-D content of milk. Three different methods of enrichment may be employed: (1) a vitamin-D concentrate, such as cod-liver oil, may be added directly to the milk; (2) the milk may be subjected to irradiation by carbon arc lights of suitable strength; (3) irradiated yeast or other suitable irradiated material may be added to the diet of the cow. A fourth method, that of irradiating the cow itself, is at present under investigation. Vitamins E and G are difficult to assess, but there is reason to believe that vitamin G, at any rate, is present abundantly in milk at all seasons of the year. Though it is perhaps true that in the United States of America supplementing of the infant's diet with vitamin D is adequate to bring about normal development, it is doubtful whether in this country complete reliance can be placed on milk for the supply of the various other vitamins required by the growing child.

There is a considerable amount of evidence that both vitamins B and C are precariously near the

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[2] Jour. Amer. Med. Assoc., Oct. 28th, 1933, p. 1371.

[3] Amer. Jour. Pub. Health, October, 1933, p. 1031.

Seventeen samples of Certified milk and 29 samples of Grade A. (T.T.) contained β-hæmolytic streptococci of bovine type, the count reaching as high as 20,000 organisms per c.cm. Subsequently an improved technique revealed the *fact that only* 2 out of 39 samples of the Grade A. (T.T.) herds remained consistently free from this infection. In these two herds mastitis control measures are being practised by the owners. *All* raw rail tank supplies were found to contain hæmolytic streptococci, whilst in the corresponding pasteurised samples they were not found.

These investigations emphasise the value of veterinary inspection and tuberculin testing in the production of a milk-supply free of tubercle infection and give strong support to the case for the pasteurisation of non-graded milk, particularly when it is collected in large bulk. The need for control of *Br. abortus* infection is indicated by the widespread contamination particularly of graded milks intended primarily for consumption in the raw state. That control of mastitis is possible is shown by the cleanliness of the two herds where a genuine effort to stamp out this disease has been made, and it is to be hoped that such efforts will be made more generally.

It is unfortunate that even at a conference of experts there should still be voiced a fear that the policy of rendering milk as now produced safe for consumption is incompatible with a campaign for the eradication of disease in dairy herds and the promotion of cleanliness in milking and in transport. Prof. W. W. Jameson, who presided over the conference on the first day, pointed out that the ideal was not only the freeing of cows from diseases communicable to man, but in addition the protection of milk from the time it left the cow until it reached the consumer.

THE CIRCULAR FOCUS

THE significance of the small solitary circular focus in a tuberculous lung has been variously interpreted, most writers apparently looking upon it as evidence of a primary infection. Prof. A. Fraenkel (Heidelberg), in a paper read last week in his absence by Dr. Jane Walker before the Tuberculosis Association, described the lesion as affording early anatomical and radiological evidence of tuberculous reinfection. The presence of these small foci cannot be demonstrated by percussion or auscultation, nor are they accompanied by any subjective or objective symptoms or signs, and neither their size nor their position is especially characteristic, although they are more commonly found in the right upper lung field. Opportunities for seeing them are rare, but in a case which was reported by Fleischner (Vienna), photographs of which were thrown on the screen, it had been possible to carry out almost simultaneously radiological and anatomical investigations. The healthy carrier of a circular focus which had been followed by X ray was killed in an accident, lung section showing a spherical caseous calcareous structureless lesion, surrounded and isolated by connective tissue. Caseation was absent in the hilum lymph glands and no reaction was present in the neighbouring tissues. The remains of a calcified focus were seen not only at the apex, but also in various other parts of the lung. Prof. Fraenkel believes that the sharply circumscribed concentric focus of this kind must be due to a "special and favourable allergic condition," forming a powerful constitutional factor in resistance against infection. He suggests further the possibility that a hæmatogenous extension can occur from these small scattered foci which are the remains of an early dissemination; indeed, he looks upon the circular focus in adults as a hæmatogenous, monotropic, metastatic structure comparable to the isolated focal formation in bone, kidney, eye, &c. The quiescent circular focus though an early is not the earliest radiological evidence of tuberculous reinfection. Redeker observed "minute fine nodular shadows and the local visualisation of the vessels" as the very first reaction; the circular focus is the *first expression of the action of a defence mechanism*, a systematic observation of which forms the basis for prognosis and therapy. Artificial pneumothorax used at this stage of the disease has proved a permanent and safe therapeutic measure, and in Prof. Fraenkel's opinion should be employed as soon as the circular focus begins to show signs of activity, even where the sputum is negative.

In the discussion which followed this paper, Dr. F. A. H. Simmonds said that while circular foci might be associated with relapse, yet surely some slight systemic disturbance would usually be noted, such as a mild "influenzal" infection. He also suggested that for these cases a short period of artificial pneumothorax, 9 to 12 months, would probably be sufficient. Dr. W. E. Lloyd, who showed a number of slides, said that most of his cases had had symptoms, and in all but one the circular focus was in the left lung. Dr. S. R. Gloyne said that he had been struck with the assumption in Prof. Fraenkel's paper that the circular focus was always secondary to Ghon's focus. This he thought was sometimes but not always true. He also deprecated the way in which everyone laid stress on allergy in these days, and no one mentioned dosage. The dosage received must have a bearing on morbid anatomy. Prof. S. Lyle Cummins said that while allergy could be postulated by symptoms, he thought it was dangerous to postulate it from X rays. He also disagreed with Prof. Fraenkel's suggestion that circular foci were almost necessarily hæmatogenous. It was probably often but not invariably so. An old healed focus was probably surrounded by a *zone of arrested phagocytes containing tubercle* bacilli, and even calcareous tissue might contain living organisms. Other speakers disagreed as to the advisability of inducing a pneumothorax. Dr. G. Hebert objected to the term "round focus" which he suspected of being first cousin to the annular shadow. Nearly all his cases of small round foci were associated with hæmoptysis. Most of the cases cleared up, the foci gradually fading.

BRUNNER'S GLANDS

J. C. Brunner died in 1727, and his glandulæ duodenales are known to every elementary student of histology; not, we fear, so much because of their inherent interest, but because they provide a means of "spotting" a section of duodenum. They have, indeed, not been very interesting in the past because next to nothing was known of their function. Prof. H. W. Florey and Dr. H. E. Harding, of Sheffield, have now published[1] some observations which endow them with considerable medical importance. Brunner's glands are particularly well developed in the rabbit, in which they may also be easily separated from the bile and pancreatic ducts, and most of the experiments recorded were made on that animal with confirmatory findings in cats, guinea-pigs, and rats. The secretion of the glands, which may amount to more than 5 c.cm. in an hour from 10 cm. of duodenum, is a very viscid liquid of the consistency of egg-white, which is highly alkaline from bicarbonates, equivalent to at least one-tenth normal soda. It contains no peptic or starch-splitting ferments, nor was lysozyme detected. The glands are activated by passing dilute hydrochloric acid through the upper part of the duodenum, and it seems clear that they perform the important functions of neutralising the acid of the gastric juice and of mechanically protecting the delicate mucosa of the intestine; appropriate experiments show how easily this may be injured by concentrations of acid well within the possibilities of fluid evacuated from the stomach through the pylorus. It can hardly be a coincidence that peptic ulcers are most frequent in those parts provided with Brunner's glands and their analogues the pyloric gastric glands. And there is definite experimental evidence that unneutralised gastric juice can produce chronic ulcers. The innervation of Brunner's glands still needs working out, but it is possible that worry and other emotional conditions will find here their nexus with peptic ulcer.

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[1] Jour. Path. and Bact., 1933, xxxvii., 431.

THE ORIGIN OF THE SOCIAL PROBLEM GROUP

THE expression "the social problem group" first appeared in the report of the Departmental Committee on Mental Deficiency, published in 1929.

> "Let us assume," this Committee wrote, "that we could segregate as a separate community all the families in this country containing mental defectives of the primary amentia type. We should find that we had collected among them a most interesting social group. It would include, as every one who has extensive practical experience of social service would readily admit, a much larger proportion of insane persons, epileptics, paupers, criminals (especially recidivists), unemployables, habitual slum-dwellers, prostitutes, inebriates, and other social inefficients than would a group of families not containing mental defectives. The overwhelming majority of the families thus collected will belong to that section of the community which we propose to term the 'social problem' or 'sub-normal' group. This group comprises approximately the lowest 10 per cent. in the social scale of most communities."

In an exhaustive study of the development of this group of people, of which the first volume has recently been published,[1] Mr. E. J. Lidbetter seeks to trace its origin and comes to the conclusion that heredity probably plays a large part in its production. Until the latter end of the nineteenth century the machinery of administration of the poor-law in England and Wales made no provision which would enable the family or personal history of persons in receipt of relief to be systematically investigated. There was nothing except the personal recollection of the officer concerned to relate one period of chargeability with a second or subsequent period, no possibility of connecting the chargeability of different adult members of a family with that of an individual, and no means of noticing that successive generations of the same families were intermittently in receipt of relief. It is over 20 years ago that Mr. Lidbetter, as a relieving officer in an East End borough, observed these relationships between his "clients" and began a genealogical study of the paupers in his area. After a few years of single-handed work he was granted financial assistance from the Eugenics Society, and the supervision of his material was undertaken by a research committee, presided over at first by Prof. Cyril Burt and later by Prof. Julian Huxley. A general review of the work was given by Mr. Lidbetter in the Galton lecture of 1932. The volume now issued, which supplies the first detailed account to be published, consists mainly of 26 pedigrees of persons chargeable in 1923, with some brief descriptive notes showing as far as possible the qualities and characteristics of the individuals and the amount of relief, if any, which has been accorded to them. A large degree of assortative mating is revealed, and where there is not the repeated appearance of pronounced and obvious defects, such as insanity and epilepsy, there is too often the perpetuation of the merely low-grade type. A control set of pedigrees of children chosen at random in the schools is also being developed. The pedigrees present form only an instalment of the work and for the discussion of the many problems, which the investigation raises, we are rightly bidden to wait for its completion. For the present Mr. Lidbetter is content to present a sample of his material and to direct some attention to its high lights. This sample is, however, sufficient to demonstrate the patience and industry which he has brought to bear on a most formidable task, and to give promise of the development of a rich source of information.

ATROPINE AND ADRENALINE IN HEART-BLOCK

THE action of atropine on the idioventricular rate in the presence of complete heart-block is of some clinical importance, since this drug has been generally held to have little or no accelerating influence. Its effect has often been stated to serve in diagnosing complete block from sinus brachycardia, in which the heart beats slowly but the normal auriculo-ventricular sequence is preserved. Usually between 30 and 40, the idioventricular rate sometimes lies between 40 and 50, and it is then that confusion between the two rhythms is most likely to arise. The observations of Dr. A. R. Gilchrist[1] show that it is precisely under these conditions that the use of atropine as a diagnostic test is most fallacious. He noted the effect of atropine sulphate gr. 1/30th intravenously in ten patients with complete block. (We now know that the smaller doses of atropine which have been customary are not sufficient to paralyse the vagus, which is the aim of atropine administration.) In all cases the ventricular rate was quickened, the increase varying from 1 to 47 beats per minute, or, expressed as a percentage of the initial rate, from 5 per cent. to 96 per cent. The wide variation in the acceleration produced appears to be correlated with the initial rate—the higher this is the greater the acceleration under atropine. It was found that the logarithm of the increase in rate varies more or less in linear fashion with the logarithm of the initial rate. While atropine also caused an increase in the auricular rate, no such relation between the increase and the initial rate was found. In attempting to account for the peculiar ventricular response to atropine, Gilchrist suggests that it is related to the varying site of the lesion in complete heart-block. We have reason to believe that the lower the level in the conducting tissue of the lesion, the slower the idioventricular rhythm and the less susceptible to vagus influence the centre of impulse formation. On this supposition, an idioventricular centre of relatively low natural rhythmicity, situated in the lower regions of the conducting tract, would yield a minimum response to atropine.

Gilchrist[2] has also investigated the effect of administering adrenaline subcutaneously in 12 patients with complete heart-block, and has noted an increase in the auricular and the ventricular rates in all cases.

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[1] Heredity and the Social Problem Group. By E. J. Lidbetter. Vol. I. London: Edward Arnold and Co. 1933. Pp. 160. 21s.

[1] Quart. Jour. Med., October, 1933, p. 483.
[2] Ibid., p. 499.

Contrary to what was found with atropine, the ventricular acceleration was greater when the initial rate was slow, and vice versa; the curve obtained appears to show that the two values vary not in a linear but in a logarithmic manner. It was further shown that doses of the drug between 0·25 and 1·0 c.cm. produced remarkably constant effects, suggesting a possible analogy with enzyme action. The behaviour of the auricles following adrenaline injection was more variable than that of the ventricles, and though acceleration was the rule, no close relation to the initial rate was found. This may be explained by the opposing effects of the direct action of the drug on the auricular muscle and vagal inhibition of the sino-auricular node secondary to an increase in the blood pressure and secondary also to increase in the ventricular rate. Abolition or reduction of the degree of block was never a result of adrenaline injection; on the contrary in one case a 2 to 1 block became complete, and in the same patient a shift in the site of a bundle-branch lesion seemed to be induced.

From the clinical point of view these observations are of importance in confirming the value of adrenaline as a means of raising the ventricular rate in complete heart-block, and further as showing that the effect is most marked when it is most desired—i.e., when the initial rate is slow. They also suggest that the dose of the drug used need not exceed 0·25 c.cm., since a dose of four times this amount appears to have no greater effect.

SMOKE POLLUTION

THE fourth annual report of the National Smoke Abatement Society records an extension of its work and, what is highly suggestive of its value, a slight increase of financial support. Slowly but surely a general interest in the prevention of atmospheric pollution by smoke is being stimulated. Advisory regional committees have been set up in two new areas, namely, Merseyside and South-west Lancashire, Northumberland and Durham. Unfortunately the Potteries, one of the smokiest areas in the country, has not yet reacted to the blandishments of the Society. Classes for boiler men continue, and the City and Guilds of London Institute is to be asked to issue a national certificate to those who have attended them. To judge by the remarks of the chairman of the Sheffield committee at the recent annual conference of the Society, all is not well with the administration of the Smoke Abatement Act of 1926. New furnaces have been installed which offend every law of combustion, under cover of the phrase that nothing in the Act shall obstruct or interfere with the efficient working of metallurgical processes. At this conference Dr. H. A. Des Voeux, in his presidential address, spoke of the various new and ingenious methods of measuring atmospheric pollution, and pleaded with rural districts and so-called health resorts to supply data in order to furnish a standard of comparison with the more popular centres. Two speakers at the conference put in a timely plea for avoidance of new pollution in connexion with the new housing programme of the five-year plan, for industrial smoke is only a fraction of the total pollution. "Smoke will not disappear," in the words of the report, "unless we continue our work of creating that public opinion and demand out of which alone can come the desired results. To do this work of education and enlightenment effectively requires money; to do it as intensely as we could and to make use of the many opportunities we are now forced to forego requires an income much larger than we have at present." We would therefore point out that, although the Society, under the energetic guidance of Dr. Des Voeux, the chairma and treasurer, Mr. Alderman W. Melland, and th general secretary, Mr. Arnold Marsh, can report slight improvement in financial backing, many mo subscribing members are needed. And there ample room for further medical research as to th direct physical ills which may be due to a smok atmosphere. There remains here much to be learnt

SERUM IN WHOOPING-COUGH

IN assessing the value of any method of serum trea ment, and especially prophylactic treatment, on purel clinical grounds there is likely to be wide variatio according to the criteria of cure, prevention, o modification. Prof. I. Jundell has previousl reported[1] the results of giving normal adult seru to 23 children who had been intensively expose to whooping-cough. Ten of them were in th incubation period and 13 had reached the onset o the spasmodic stage. Of the first group, 8 faile to develop the disease, and in 2 it was of the mildes character. In the other 13 Jundell concluded tha the course was favourably influenced as judged b comparison with the illness of untreated elder sibling The quantity of serum given was from 30 to 140 c.cm He has now[2] carried out a series of investigation using the serum of adults who were previously treate with two or three injections of whooping-coug vaccine, and who incidentally had all had whooping cough in childhood. To avoid mass treatment different method of selection of cases is suggested—namely, to treat only infants of under two years of ag who have had intensive exposure from elder brother or sisters living in the same room throughout th disease, to treat only infants who are in the incubatio or earliest stages of the disease, and to treat only i the control child suffers from severe whooping-cough This greatly limits the material of the investigation, but the course of the disease in the treated and control cases has been accurately charted with reference to the actual number of attacks of coughing, whooping, and vomiting each day. In two instances the control used was a twin brother or sister who had had identical exposure. Sedative drugs were used in the treatment of the control cases but not in the serum-treated ones. Jundell emphasises the fact that the number of his cases is too small to justify any conclusion, except that the method is worth investigating further, but he claims that his plan of assessment allows of the comparison of different series. He also suggests that the investigation might be carried further by using serum from two groups of adults, one having received whooping-cough vaccine while the other has not.

Dr. H. S. Raper, F.R.S., Brackenbury professor of physiology in the University of Manchester, has been appointed a member of the Medical Research Council in succession to Prof. Edward Mellanby, F.R.S., who resigned his membership on accepting the secretaryship.

Prof. W. W. Jameson has been invited by the Rockefeller Foundation to accompany Dr. F. F. Russell, their medical director, Dr. V. G. Heiser, their representative in the East, and Prof. J. G. Fitzgerald, dean of the Toronto Medical School, on a visit to India for the purpose of examining some of the public health work in that country in which the Foundation are interested. He expects to leave London about Dec. 21st.

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[1] Acta Pædiat., 1928, vii., 319.

[2] Ibid., 1933, xv., 1. *Paper read before the International* Pædiatric Congress, London, 1933.

THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

VII.—PREVENTABLE DISEASES OF SCHOOL-CHILDREN

(Concluded from p. 1227)

Dormitory Infection

IN a residential school infection may occur by many channels and in various places. It may be carried by milk, or by such vehicles as tableware, pencils, pens, roller towels, or conceivably by books, but usually the infection is wafted in droplet form direct from nasopharynx to nasopharynx in dormitory, common-room, class-room, changing-room, study, dining-room, tuck shop, hall, or chapel. The relative importance may vary with the school, but, except in girls' schools, where cubicles are almost universal, the dormitory is usually the most important. This is only natural, for in bed the carrier of infection and its recipient remain in undisturbed proximity for nine or ten hours, and ventilation is lessened by the stillness of persons, by closure of doors, and often—during high wind, driving rain, or cold—by the closure of windows. Measles and influenza are so infectious that they spread almost as easily in class-rooms as in dormitories, but epidemics of hæmolytic streptococcal infection—e.g., tonsillitis, otitis media, scarlet or rheumatic fever, and pneumococcal infection—should always suggest the most critical examination of dormitories for conditions which favour rapid and easy transmission, and the chief of these conditions are the following: too great proximity of beds, deficient floor area, and deficient ventilation.

MINIMAL REQUIREMENTS FOR DORMITORIES

The Board of Education has had for the last 20 years excellent minima for the dormitories of new secondary schools which are as follows:—

Dormitories.—At least 3 ft. between beds; floor area not less than 65 sq. ft.; cubic space of 700 cu. ft. Ventilation must be adequate and "through," by arranging the windows on opposite sides of the room.

Cubicles.—If partitions be *not* carried to ceiling, 65 sq. ft. and 700 cu. ft.; if partitions be carried to ceiling, 100 sq. ft. and 1000 cu. ft.

Sick-rooms.—Not less than 6 ft. between beds; a window between every two beds. 100 to 120 sq. ft. and 1000 cu. ft. per bed.

WINDOW AREA

What is adequate ventilation? One of its indices is the ratio which the "open" window area bears to the floor area. With the ordinary sash window, the potential "open" window is just half the whole "light" window. In an ordinary room the usual standard ratio for light area/floor area is 1/10th, so that with a sash window the window-to-open/floor area is 1/20th. Owing to the proximity of beds to windows in dormitories and the consequent necessity for closing windows on the windward side in rain, the standard ratio for window-to-open of 1/20th is probably not sufficient. Nevertheless you will frequently find dormitories in expensive and well-known schools with ratios as low as 1/40th or even 1/44th. Another point to remember is that windows should reach the top of the room. A large "dead space" is a serious hygienic defect often found in old buildings, especially in those designed for other purposes and adapted for school use.

SPACE BETWEEN BEDS

The minimal standard of 3 feet between the edges of beds and 60 feet of floor space for the beds of *healthy* persons originates with Florence Nightingale. The Royal Commission on Barracks of 1861, which her driving force secured, said some solemn truths of which the following are only examples: "In any case overcrowding should utterly be put an end to." and "They have not been aware that if above a certain number of men are placed in a certain cubic space, the lives of some of these men, and the health of others, is certain to be sacrificed."

These standards, as I have pointed out, are minima, but one seldom finds them. The most important is undoubtedly the space between beds. I have been able to show by means of plans (Glover, 1932) how bed-to-bed infection by hæmolytic streptococcus can arise. One plan is of a large dormitory which owing to its width has ample floor and cubic space, yet the beds are only 1 ft. 8 in. apart. There are ample windows on the south side, yet when rain compels closure of these, ventilation depends on small corridor ventilators on the north and is thus not really "cross." The plan shows clear evidence of bed-to-bed infection in 10 cases of scarlet fever, 2 of scarlet fever with rheumatism, 7 of tonsillitis, and 4 of so-called influenza. Epidemiologically, large dormitories are more dangerous than small ones, which somewhat limit the run of infection.

Head and tailing of beds is done in some admirable institutions, but generally in those in which the wall space per bed is insufficient. It is usually a disappointing procedure, for reasons which can be understood by considering the child's usual attitude in bed.

The human nostrils point generally downwards, so that in sneezing droplets are propelled, not at right-angles to the long axis of the bed but at a comparatively acute angle—i.e., in the direction of the neighbour's nasopharynx if head and tailing has been adopted and he happened to be turned towards the sneezer. Children tend to curl up in their beds so that the increase in distance between noses is less than expected.

It is doubtful whether head and tailing of beds has any effect beyond perhaps imparting a feeling of satisfaction that at least something has been done. It should be unnecessary if the dormitory complies with the standards quoted, and is of doubtful utility when the sleeping accommodation falls below these standards.

Otitis Media

Otitis media probably causes more anxiety to school doctors than any other disease, with the possible exception of appendicitis. It is a disease of the highest importance. Not only is it a dangerous disease in itself, but a very large proportion of deafness is due to it, some 30 per cent. of all acquired deafness being due to otitis after measles and some 34 per cent. to otitis after scarlet fever. In public schools, with their rather older age-grouping, tonsillitis appears to be a more frequent cause than either measles or scarlet fever. On an average, some 12 per cent. of scarlet fever cases in hospital develop otitis media as a complication. Here is the daily incidence chart of an epidemic of tonsillitis in a public school in which the nasopharyngitis and tonsillitis epidemic gave rise to otitis media in 12 per cent. of all cases.

Otitis media should be regarded as an infectious disease. I have known 15 per cent. of all the boys in a large preparatory school to be attacked during a measles epidemic, and I know of two instances, one a public and one a preparatory school, where in the absence of measles or scarlet fever, 9 per cent. of all the boys were attacked in a single term. I have known otitis media spread all down one side of a ward of a school sanatorium filled with convalescents from measles.

The importance of dormitory infection in producing such secondary epidemics as those of otitis media is suggested by the fact that whilst the incidence of measles and influenza during 1930 and 1931 has been substantially the same upon boys and girls in the schools participating in the "Inquiry into Epidemics in Schools" of the Medical Research Council, the incidence of serious complications has been significantly lower upon girls than upon boys. Girls have had less than half the incidence of otitis media and pneumonia, and only one-eighth the incidence of sinusitis as compared with the boys. This variation, if it be confirmed by subsequent experience, may have several causes; the greater care the girls receive, their superior discretion when ill, and their better nutrition may all be partial causes, but the most likely cause of the relative immunity of the girls seems to me to be that nearly all the girls sleep in large, well-ventilated cubicles, whilst nearly all the boys sleep in dormitories.

Some practitioners stress the relation of otitis media to swimming baths, but whilst the last to minimise the importance of pure water in such baths, I would point out that the results to date of this inquiry show that by far the highest incidence of otitis media in these schools occurs in the Lent terms when few schools do any swimming.

Milk

The infection of sore-throat and scarlet fever, as you all know, is not infrequently carried by milk.

Two epidemics of scarlet fever both due to type 2 streptococcus provide a suggestive contrast. One occurred at a children's sanatorium, 305 children being housed in ten wards. The epidemic assumed the typically "explosive" character of milk or water-borne epidemics, and cases occurred simultaneously in all ten wards. Infection was found to have been conveyed by milk, and owing to the open-air conditions there was probably little or no bed-to-bed infection. In the other epidemic affecting three houses of a public school with 132 boarders, the incidence of cases in the separate dormitories, which occurred at intervals corresponding to the incubation period, suggested dormitory infection as a main factor; bed plans gave evidence strongly supporting this view.

Milk used in a residential school should always be pasteurised. For children of this age, pasteurisation has, as far as we know, absolutely no deleterious effect upon the nutritive value.

Various Preventive Measures

Recent work, especially that by J. G. Cumming (1930) in America, suggests that the *sterilisation of tableware*, including tumblers, is of importance in the prevention of nasopharyngeal infections. Many preventive measures I must omit altogether. Some are self-explanatory, such as:

(*a*) Special propaganda to prevent pupils returning to school after the Christmas holidays infected with influenza or febricula.

(*b*) Temperature taking for three weeks after the beginning of term.

(*c*) Immediate isolation of all pyrexias and catarrhs.

(*d*) No work before breakfast for at least the first six weeks of the term.

(*e*) All hot baths or showers taken during the day or after games to be followed by cold showers.

(*f*) Prevention of chill when watching matches and sports.

(*g*) Adequate provision for drying clothes, uniforms and boots.

Closure of Residential Schools.—You may be asked, either in your examinations or in real life, to decide the question of closure of a residential school on account of an outbreak of infectious disease. The Medical Officers of Schools Association in their Code say:—

"The dispersion of a school on account of an outbreak of infectious disease is always a serious step to take, and should very rarely be required. It may lead to a widespread distribution of the disease.

"In the opinion of the Association a serious outbreak of an infectious disease in a school affords a sufficient justification for the temporary removal of healthy children by their parents or guardians, should they see fit to take this step; but the onus of removing the pupils should rest with the parents, and not with the School Authorities. The latter should rarely go beyond advising parents to take away their children.

"Each case, however, must obviously be decided on its own merits, and if closure is considered necessary, such a step should only be taken after consultation with the local Medical Officer of Health and the Ministry of Health."

The Ministry of Health and the Board of Education say that, "it is only in special and quite exceptional cases that it will be necessary to close a school in the interests of public health."

It is in infectious diseases of the nervous system, of which I have had no time to speak, that the question usually arises in its most acute form. In the case of poliomyelitis the Ministry's official Memorandum states (1932), referring to residential schools, that "the balance of advantage is in favour of *not* closing a school on the appearance of poliomyelitis. If the school be closed any potential infection is more widely distributed (not infrequently in homes containing younger children) and passes beyond such supervision and control as are furnished in a well-equipped residential school conducted on hygienic lines."

There is no time to speak of the contagious diseases, some of which afford excellent examples of preventable diseases of school-children. The enormous reduction in incidence of ringworm of the scalp is one of the triumphs of the school medical service, for which it has not received nearly enough praise. Tinea cruris and ringworm of the feet still haunt our boys' public schools. Conjunctivitis is often spread by *towels* (on the hygiene of which I could say much), but it sometimes, as in a large recent epidemic in elementary schools in Staines, appears to be spread by droplet infection too.

Finally, remember that the school medical officer must not only treat his patients efficiently and devotedly, but with an equal efficiency and zeal apply himself to his preventive duties, a much harder, and often a thankless, task. If we can do little to prevent measles or influenza, we can do a good deal to prevent their secondary complications which render them so menacing. The child who goes through an uncomplicated attack of measles, mumps, or whooping-cough, or the less dangerous chicken-pox or German measles, has at least acquired a lasting immunity to the disease, which may be a useful asset in after life; but the complications, to the prevention of which we have chiefly devoted this hour, will give him nothing but danger—danger to life and danger of lasting disability. "I have always thought," said Sydenham, "that to have published for the benefit of afflicted mortals any certain method of subduing even the slightest disease was a matter of greater felicity than the riches of a Tantalus or a Croesus." This great felicity awaits those who publish with wisdom and zeal the certain doctrine of the value of sunlight, fresh air, and ample space in preventing sickness in school-children.

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SPECIAL ARTICLES

MENTAL HEALTH CONFERENCE

THE third biennial conference on mental health, organised by the National Council for Mental Hygiene, was held at the Caxton Hall, Westminster, from Nov. 22nd–24th. It was opened by Prince GEORGE as president of the Council.

The Place of Mental Health in the Life of the Nation

Sir MAURICE CRAIG (chairman of the Council) described mental hygiene as one more link, and an all-important link, in those matters which concerned the understanding and regulating of life. The importance of preventive medicine on the mental side was not yet fully appreciated. Public bodies devoted much time and money to bodily disease, but many of them sadly neglected the disorders of the emotions. Every man should ask himself whether he was regarding mind disturbance and its treatment in an open-minded way. No excuse, not even a great economic crisis, could be regarded as reasonable ground for closing the eyes to mental suffering. Every advance in the science of medicine emphasised the close relationship between bodily and mental disease. Knowledge of mental hygiene was important in all periods of life, but undoubtedly most of all when dealing with children and adolescents. Character could be moulded for good or ill by environment. A child's sensitivity might become assets for its success or might lead to its downfall. There was a tendency among parents to leave to others what they ought to do themselves. The problem of the day was whether the release of conventional restrictions would lead to great opportunity for right thinking and right doing or end in dismal failure. The man in the street must take the trouble to acquire some knowledge of the mind. While there was danger in imperfect knowledge, there was greater danger in ignorance.

Prof. W. LANGDON BROWN spoke of the correlation between mental disorder and such physical affections as septic foci, heart disease, and disorders of the ductless glands. A very slight organ inferiority would affect the whole mentality of ill-adapted people. The basis of neurosis was loneliness. A sense of inferiority should only be labelled a complex when it led to retreat from social responsibilities. Fear, especially fear of the unknown, was the root of many illnesses. Neurotic illnesses were largely a subconscious defence against a difficult situation. The note of the twentieth century was awareness, and the self-knowledge inculcated by the new psychology would breed a more sympathetic attitude towards the difficulties of others. In so far as people avoided their responsibilities toward the asocial citizen, they too were being asocial.

The Earl of FEVERSHAM (president of the National Association of Probation Officers) said that to appreciate the place of mental ill-health in the life of the nation demanded imagination. Medical and mental science had made great advances during the last quarter of a century. The war had shown that many actions formerly attributed to madness or badness might depend on ill-health due to various factors. The human machine needed constant attention and could not be attended to properly unless fully understood. While physiology had arrived at the status of manhood, mental science was in its infancy. The country had never been so well provided with clinics of all kinds, yet the number of mentally devitalised persons increased steadily, especially among the very young. What could the mental hygiene movement do to save the country from the menace of crime? Experience had shown that 60–70 per cent. of offenders were as likely to respond to right treatment as they were to be made enemies of society by the wrong treatment. The courts did not always take advantage of the powers given them to inquire fully into all the circumstances of the offender, and so continued to mete out treatment that was futile. Good material for want of suitable treatment was allowed to drift into crime. The community as a whole must understand the association between crime and mental and physical health.

Dr. HELEN BOYLE read a paper sent by Sir E. TINDAL-ATKINSON (Director of Public Prosecutions), in which he said that he had at times contemplated a classification of crimes and criminals on a scale related to the mental state of the offender. The expert safe-opener was exercising singularly perfect mental processes, and at the other end of the scale came the truly insane criminal. Between the two lay an uncharted sea of crimes in which mental state was in fact, if not in law, an issue relevant to responsibility. The work of the Council must in due time march with a diminution of crime. Progress might be slow, but the tide crept on. Dr. Boyle added, on her own behalf, that this was a remarkable confession of faith. If throughout the world level-headed understanding coöperation prevailed, there would be less instability of mind, and perhaps even of dollars. It could only be achieved by faith and hard work. The cause of the expert safe-breaker's choice of profession should be sought in his emotional adaptation. In childhood mental hygiene could most fully come into its own.

Working of the Mental Treatment Act

Mr. L. G. BROCK (chairman of the Board of Control) presided, and introduced Sir HILTON YOUNG (Minister of Health), who outlined the ways in which this Act had extended the facilities for treatment without certification; their value, he said, had been widely realised, but some local authorities were still backward in taking advantage of them. Careful and serious attention should be directed to the position of temporary patients under Section 5. This section constituted an experiment on the success of which might depend the chances of securing at some future date Parliamentary assent to any extension of facilities for treatment without certification. The section represented the first occasion on which Parliament had permitted detention for a considerable time without the usual safeguards. Whereas the returns showed that 11·9 per cent. of the admissions could have been dealt with on a temporary footing, yet in fact only 1·6 per cent. of these rate-aided patients had been so admitted. A very much higher figure was reached with private patients. This could not be if any serious effort were being made by local authorities to work the section. Forty public mental hospitals had not yet admitted a single temporary patient. If some hospitals could do it, why not all? He blamed the local authorities, the relieving officers, and the certifying doctors, and suggested that magistrates might help by considering whether a patient could be dealt with temporarily.

Dr. J. S. I. Skottowe stated the principles underlying the Act and the general difficulties which had to be overcome. The first principle, he said, was that mental illness affected the patient as an individual, a member of a community. Mental illness was a matter of degree, and the Act recognised this. Local authorities must be the sponsors of local mental health services as well as the managers of mental hospitals. Sound mental health made for sound social health. Dr. Skottowe then described the measures taken at Swansea, which included close liaison with the general hospital and education of the public. Over 20,000 people had visited the mental hospital during the two days in which it had been thrown open. The first result had been a marked increase in the proportion of uncertified cases received. The non-volitional clause in Section 5 raised, he thought, a difficulty in that general practitioners could hardly be expected to form an opinion on the suitability of patients for "temporary" care. Nevertheless the section fulfilled a real need. The Act demanded an immense amount of formalistic clerical work. He did not think that there should be separate accommodation for voluntary and certified cases as this distinction was a legal and not a medical one. General practitioners still hesitated to certify, and so the patient had to go first to a public assistance institution and thence to the mental hospital. Criticism was directed less against the Act than against the small use of it made by many local authorities. Either defective and chronic cases must be removed from the mental hospitals or fresh accommodation must be provided for recoverable cases. Half a dozen regional psychopathic hospitals, associated with universities, would be better than a large number of small admission units attached to old-fashioned mental hospitals.

Dr. J. I. Russell said that it was deplorable to read that the object of the Act was to keep people out of mental hospitals, or that the voluntary class was the uncertifiable class. One of the chief objects of the Act was to make it easier for patients to get in, and most voluntary patients were certifiable. It was morally wrong to certify a patient who claimed the voluntary privileges of the Act. The responsibility for certifying cases unnecessarily rested on general practitioners and relieving officers. Temporary treatment might never, he feared, have a fair trial because the difficulties it involved could be avoided by certification. It would serve admirably for all involuntary patients who did not positively protest against treatment. The approved medical officer ought to receive a fee for his opinion, and not only if he signed the form.

Sex Problems of Adolescence

Addressing the men's meeting, Dr. E. B. Strauss said that the sexual difficulties of adolescence had their origin in earlier years. He traced the growth of sensual feelings and love of the parent, concluding with some practical "do's" and "don'ts" for parents and teachers.

Dr. E. Graham Howe said that adolescence was the crossing of a bridge from childhood, play, and home to adult life, work, and society, a period of strain upon which additional burdens should not lightly be cast. The child had to learn that in addition to "my law" there was "your law" and "the law," the law of the reality of life. All were rebels at heart, to some extent. To discover "the law" adolescents must "try it on," and prohibitions carried too far only led to rebellion. Whether he stole sex or sugar, a thief was a criticism not so much of himself as of the law which had withheld his needs. All would be well with the adolescent in the end so long as he moved towards the right side of the bridge. Masturbation belonged to the "my law" side, but must not be frustrated by fear. Homosexuality was a normal aspect of the "gang" phase. The two extremes of cruelty and idealism in the growing boy balanced each other and must not be separated into opposite camps of right and wrong. It was better to become good than to be good, and a false idealism or moral phantasy had great dangers. The moral disasters of sexual abuse had been more stressed than the sexual disasters of moral abuse. Reality must be the test of motive. If phantasy were encouraged it might be followed by a reaction of cynical disillusionment. Authority must act as a mediator and not expect too much.

Addressing the women's meeting, Dr. Elizabeth Sloan Chesser said that the first need of the adolescent was good nutrition, and the next was sound sex education. Every child also needed wise love, as distinct from sentimentality, opportunities for self-expression and creative activity, and parental harmony.

Dr. Doris Odlum said that adolescence was the time when the child ceased to be content with a phantasy life apart from reality and demanded a love object. The first object was usually of the same sex, and all too often the teacher, through lack of instruction, treated the hero-worship harshly or sarcastically. The adolescent's intense capacity for suffering was seldom realised. The result of unhappiness at this stage was fear of all love objects. The adolescent stood in great need of a friendly adult—who was seldom available—and adults had a clear duty towards youth. The problems of youth were too nearly the problems of the adult for most adults to view them dispassionately, because so few people were psychologically "grown-up."

With the Lady Emmott (vice-president, the National Council of Women) in the chair, Dr. Bernard Hart opened a discussion on

Suicide and Society

Throughout history, he said, society had expressed its disapproval of suicide by various menacing laws and customs. Nevertheless there were exceptions: for instance, the captain who went down with his ship and the widow who committed suttee. The statistics of suicide were appalling. In England and Wales 14 people committed suicide every 24 hours, a yearly incidence of about 1 per 10,000 population, apart from unsuccessful attempts. Males exceeded females in the ratio of 3 : 1, and the highest rate appeared in spring and early summer, and in old age. There was no evidence of a serious amount of child suicide or of a notable increase in recent years. In more than four-fifths there was no real evidence of previous insanity. Suicide was no simple henomenon but the final act to which a great number f very disparate factors might ultimately converge. ts frequency seemed to vary inversely with the degree f social condemnation prevailing; this, however, was only a negative factor. Suicide was relatively infrequent in static periods, when habit, convention, nd religious precept offered ready means of adaptaion, but frequent in periods of disorganisation. Suicide might be regarded as a peculiarly final and definitive adaptation, or as the bankruptcy of all attempts at adaptation. The individual had also o adapt to internal forces, and intrapsychic conflicts were generally found behind the emotional states eading up to suicide. Suicide did not occur as the esult of a cold intellectual decision that life was not worth living. While the theory of escape from an ntolerable external or internal situation was valid in arge degree, it did not cover the whole field of suicide. Psycho-analytical theory put forward a fundamentally different conception, involving positive driving forces owards suicide. The problem required extensive nvestigation; at present it could only be attacked ndirectly by securing adequate treatment of the mentally disordered.

Dr. J. E. Nicole said that suicide must often spring into the normal mind, and forerunners of many kinds of crime might be found in the mental development of childhood. Childish death wishes were unformed and infantile, and largely or wholly unconscious, but their counterparts in adult life could scarcely be described as unnatural. The precipitating causes of suicide were the intolerable situations, but they proved too much for the individual because of the predisposing causes: hidden stresses and conflicts. The task of education was to convert the "naturally abnormal" tendencies into a socially approved adult behaviour. The process might not go smoothly, and a sense of inferiority and helplessness might be induced; or the tendencies might persist in the unconscious mind with considerable urge; or an aggressive reaction might be evinced. Suicide provided a means of escape from inferiority and symbolised a return to the womb; it might be an aggressive act and a revenge. But suicide probably found its strongest roots in the sense of guilt produced by phantasy satisfaction of repressed urges; it was a self-punishment and an atonement. All three reactions might be reinforced by family influences and situations.

Mr. S. H. Halford (Middlesex County Council) quoted Mr. Chapman, the magistrate, who had said that he never gave bail to intellectual men accused of sexual offences because they were so apt to commit suicide. He thought that a hundred years hence painless euthanasia would be available for all mental patients who found life intolerable.

Dr. Hart pointed out that a large proportion of actively suicidal patients were likely to recover.—Dr. H. K. Snell observed that a large number of suicidal attempts were made in a state of intoxication. —Dr. Hart thought that alcoholism and suicide were both results of the same cause.

Sir Maurice Craig said that many potential suicides could be saved if they met a sympathetic confidant. It was a delusion to say that people who talked about suicide never did it.

Sir Farquhar Buzzard occupied the chair when the subject of discussion was

The Neurotic

Dr. T. A. Ross said that all persons were neurotic sometimes, some often and some seldom. Difficulties might be met calmly and thoughtfully, or the person might after consideration refuse to tackle them at all. The third method, the neurotic, was not good; its ultimate cost was high. The more it was used the more it had to be used, like drink or drugs. People who had been trained to act reasonably could cast out fear even in conditions which produced panic in others. Love for fellowmen would cast out fear even more than confidence in a commander. Fears bred fresh fears, and the multitude of the neurotic's complaints made him tiresome. Fear had once been useful to man but had now no function. The necessary education was by no means easy. The best way of tackling the problem was through the child and the parent. The neurotic was essentially a frightened person and he did not want hectoring but understanding.

Dr. J. R. Rees said that the neurotic was really ill, not understanding himself and not understood. Nevertheless much of the best work in the world was done by neurotics; for sheer work and self-discipline they far out-distanced others, though often much of their effort was wasted. The provision of facilities for treatment was still inadequate. The great hope for the future was the establishment by local authorities of clinics under the Mental Treatment Act. It was bad to tell to a neurotic to "pull himself together"—unless he was also told what to get hold of and how to pull. There had been a great advance in recent years in the public attitude to psychotherapy. Mass psychotherapy would solve the problems of the world.

In reply to a question, Dr. Rees said that religious faith, if not dogmatic, might be a great help in recovery from neurosis.

Dr. R. A. Noble (Sydney, Australia) commented on the order manifested on such occasions as Armistice Day, and thought that there was much less neurosis in this country than in others. Much mental hygiene work was being done by others than psychotherapists. Much neurosis was due to early malnutrition.

Mr. S. H. Halford observed that boys were taught not to make a fuss, while girls were encouraged to hysterical manifestations. The preponderance of female mental patients might be the result of tradition. There were 50 per cent. more women than men in the Middlesex mental hospitals.—Dr. Ross doubted whether there were in fact more female neurotics than males, and Dr. Rees said that the sex numbers were equal at the Institute of Medical Psychology.

A member of the audience, speaking as a patient, said that most doctors treated neurotics in a lackadaisical manner and did not give them the straight talk they needed. For that reason the patients went to irregular practitioners.

Dr. J. C. Smythe stressed the paucity of medical attention paid to psychotherapy in the provinces.

Dr. W. Aston asked if something could not be done under the National Health Insurance scheme.—Dr. Rees replied that most approved societies would not recognise the existence of psychotherapy. The Ministry of Health had recently admitted that psychotherapy was a scientific treatment, which was a beginning.

Dr. Doris Odlum said that the National Council had approached many insurance and other societies with no success; they refused to admit its value —although thousands of pounds were being spent yearly on benefit when the recipients could long ago have returned to work if proper psychological treatment had been given them.

In answer to a question about the use of lay psychotherapists, Dr. Rees pointed out that much harm could be done by the untrained; the work was difficult and at times dangerous. There was, however, ample scope for assistance short of actual psychotherapy.

The Chairman alluded to the valuable psychotherapeutic education the medical student gained from every patient he encountered in hospital.

Mr. Norman Birkett, K.C., took the chair at the session which discussed

Punishment or Treatment?

Mr. Alexander Paterson (Prison Commissioner) said that the problem was eternal and universal, and each country and each century fumbled for a solution. Punishment might be the best treatment for folk of simple mentality. To the average citizen the chief deterrent was the fact of imprisonment rather than any experiences in prison. The prison medical service did an excellent and little-known work and contributed much to psychotherapy. Every day some 200 people were committed to prison: 14 per cent. of these would be on remand; 25 per cent. were sent because they could not or would not pay weekly sums laid down by the court; and 15 per cent. because they could not or would not pay fines. Thus only 45 per cent. were actually committed without the option of a fine. Of these only 6 per cent. had sentences of more than six months during which any kind of treatment could be considered. The treatment of all the varied kinds of prisoners must be very different. American prisons recognised three types: the dangerous man who needed a honeycomb of steel; the type that could be trusted inside but not outside the walls; and the type that could be sent to a lumber camp in the country. Prison was not an ideal place for treatment; it cramped youths at a time when they should be stretched, and the open life of Borstal was very much better for the young. The guiding principles must be: the protection of society, the diagnosis of the individual, and a belief in the possibilities of human nature.

Dr. R. G. Gordon said that doctors and magistrates must necessarily approach the question from opposite points of view; law was concerned with the community but the doctor must think of his patient as an individual. Since British law prided itself on its special care for the liberty of the individual, some compromise might be found between these attitudes. Punishment with the idea of compelling restitution was not easy to devise but might be really useful for young people. Attention must be fixed on the criminal and not on the crime. The delinquent must be caught young. The motivations of crime did not involve any very intricate or deep-seated psychological processes and the ultimate solution was often a matter of common sense. Nevertheless, a knowledge and experience of modern psychology was often essential, and the magistrate ought to have expert help—and that of the child-guidance team rather than of one individual psychotherapist.

Mr. Claud Mullins said that the great problem of the magistrate was his fear lest in doing what was best for the individual he might be encouraging others to "take a chance"; probation officers often begged him to be severe for the sake of others. He pleaded for a new kind of treatment—something between prison and probation—whereby the defiant delinquent could be sent for a month to a special form of detention where he would get plenty of hard work, good food, contact with the outside world, and physical exercises like penal drill in the Army; and thereafter might be put on probation. Prison and probation workers ought to have a statutory right to report to the Bench, without waiting to be asked.

Mr. Reginald Roper said that the present system of school punishments was based on tradition rather than any thought-out plan. The first step in trying to find the right treatment was to give up all idea of punishment and try to coöperate with the person to be helped. What was wrong with the courts was the idea that someone was in a position to correct and punish.

Dr. Letitia Fairfield suggested that medico-legal subjects should have a place in the lawyers' curriculum. In Edinburgh and Glasgow, bar as well as medical students took the course in medical jurisprudence and much greater unanimity of thought was achieved than in this country. A great deal of crime was due to simple gratification of the instincts at the expense of other people; if the offenders were to be treated as interesting patients they would not be helped. An over-sentimentalised attitude was very common and produced a frame of mind extraordinarily difficult to deal with. The young criminal made a very nice calculation as to the consequences of his acts. Dr. Fairfield said her instincts were against corporal punishment, but she would like to get some facts on the subject. What really were the effects of flogging on criminals? A series of case-histories was urgently needed.

Miss Ayre commended the journal of the Howard League to all magistrates.

Captain Dawson (president of the Chief Constables' Association) said that he and all his colleagues took the greatest interest in juvenile delinquency. Last year in Birkenhead 204 children had been interviewed and only 5 had returned. Nothing had been said about the police side; the police were doing more in a preventive way to keep children out of the prisons than many organisations and they saved the child from the stigma of even having been before the court.

Sir Humphry Rolleston was in the chair at the final evening session for the discussion on

The Gambling Spirit as a National Problem

Mr. F. S. Preston (Headmaster of Malvern College) said that the main causes of irresponsible gambling were desire for adventure and escape from an unattractive environment, the acquisitive instinct and an irresponsible and hedonistic attitude to life. Subsidiary causes were the change in home life, the commercialising of modern sport and the greatly increased opportunity for public gambling. The attitude to life to-day in many homes was undisguisedly materialistic and serious thought was evaded. Legal restriction might reduce the opportunities for public gambling, but in no matter had the law been made more ridiculous than in its attempts to restrict betting. The real remedies must be social reform, encouragement of thrift, and education. The National Savings Movement was probably the greatest work in this direction to-day.

Dr. H. Crichton Miller said that the problem was and must always be a matter of degree. The ethical principle involved was that no society could be healthy if the redistribution of wealth was determined by chance and did not represent service, exchange, or gift. In gambling, as in adventure and speculation, man went out to meet the incalculable; in adventure he met it with effort and reason, in speculation with reason only, and in gambling often without either. It had been said that risk-taking for trivial or selfish ends, or risk-taking which involved no intelligence in careful preparation and avoidance of unnecessary risk, marked a man as a fool and not a hero. The psychological problem of gambling therefore turned on the individual's attitude to the incalculable. The spirit of adventure perhaps tended to manifest itself in inverse ratio to the gambling spirit, but the incalculable had always fascinated the human spirit. The zest it produced was of the nature of tension, and many natures demanded this stimulating tension. The varying reactions to the need indicated the individual's life-attitude. The Narcissan man who regarded himself as the most precious thing in the world would gamble but never adventure. Introverts might take great risks when alone and be cautious in company, while the extravert was just the opposite. There was a close parallel between gambling, alcoholism, and drug addiction; all were an escape from boredom, from a feeling-tone dull and overcast with hopelessness. It might be that the increase in gambling was associated with the decline in alcoholism. Gambling was superior to drug addiction, but was frankly regressive, being associated with two outstanding features of inmaturity: credulity and irresponsibility. The supreme mark of the child mind was to believe a thing because one wanted to believe it, in spite of its incalculability or improbability. The State did nothing to protect the adult credulous, for they did not think they wanted protection and were the majority of the electorate. Powerful vested interests were concerned in their exploitation. The only hope, therefore, lay in breeding and educating a less credulous generation. To develop sound judgment in the young was one of the highest aims of education, but the enterprise often failed through the authoritative and dogmatic action of teachers. A considerable proportion of gambling " sportsmen " were what they were because they had been encouraged to grow up on the games field and in the gymnasium, but not in the classroom, the library, and the chapel. Irresponsibility should be treated as evidence of puerility rather than of wickedness.

The Rev. T. B. SCRUTTON said that gambling was the worst evil in this country to-day. It was wrong because what a man was gambling with was really the children's boots or food. Those who had interesting and varied lives should see that Lazarus at the gate had an interesting and varied life too.

Dr. ALFRED CARVER asked how the gambling spirit could be rightly directed. More of the gambling spirit would mean less of the neurotic spirit.

Dr. W. HEWETSON criticised the attitude of the press towards gambling, holding that sections of the press exploited suggestibility.

Mr. PRESTON, in reply, said he taught that life was an adventure, but not a gamble. The gambling spirit should be directed to carving a niche in life where one could be of service.

At a special session for doctors and medical magistrates, held at the House of the Royal Society of Medicine on Nov. 25th, the chair was taken by Lord HORDER. The subject discussed was

The Medical Attitude to Crime

Dr. M. HAMBLIN SMITH pointed out that what was punished was not crime but criminals, a heterogenous mass of people whose single common characteristic was that they had offended against the body of conventions known as criminal law. Many penal systems had been tried and had failed, simply because they were systems. All systems of punishment, like all systems of medicine, were self-condemned by their very name, for they supposed the offender to be the constant element, whereas he was the variable one. Crime was merely a symptom, and to name the offence told nothing. The treatment of an offender, like that of a patient, must be personal and individual. A physical examination was important, as certain physical disabilities might predispose to crime. Conduct, however, was always the result of mental life, and a defective body was only an additional handicap. An estimate of the intelligence should be made, for the results of such tests had a high degree of correlation with various features of observed conduct. The results of the tests must always be weighed in connection with other factors. Not more than 5 per cent. of criminals were mentally defective; a far larger proportion were the subject of temperamental defects. The McNaghten criteria worked well in practice and involved no hardship to the accused; the time had not yet come to improve on them. No man should be sentenced for the purpose of investigation: if investigation were needed it should be made on remand. More difficult still was the investigation of the offender's unconscious mind; many offences were certainly due to the operation of unconscious factors, and some cases were curable by psychotherapy. The cure depended, however, on the coöperation of the patient, and there were grave difficulties in the way of treating prisoners. Something might be done by placing an offender on probation with the condition that he should be treated by a psychotherapist. Conceptions of crime were astonishingly clarified by the psycho-analytic theory. Probation should not be merely a way of giving another chance, but should be a serious affair, always combined with measures of social rehabilitation. No case was too trivial for thorough investigation and no court was ever the worse for having full information before it. He hoped to see the day when every court would sit with a psychological assessor.

Dr. R. D. GILLESPIE said that the medical attitude towards crime was becoming increasingly important because it was essentially scientific, whereas the law was largely based on tradition and precedent. A branch of crime which medicine might definitely claim the right to deal with was drug addiction and alcoholism. It was desirable to have some form of treatment for addicts of the nature of lunacy certification. In France, if the family council of half a dozen near relatives signed a document, an alcoholic could be detained for long enough to give him the chance of a cure. A third problem of strictly medical concern was that of suicide, and a fourth was the group of sexual offenders. In an ideal state every offender would have a psychiatric examination. Valuable results from such an examination could be obtained in the case of motor drivers, for instance.

Sir MAURICE CRAIG said that the protection of society must be combined with the care of the individual; it would be a great benefit if the legal profession, while realising their obligation to society, would try to deal with the criminal instead of the crime.

Dr. ALFRED CARVER said he feared that the public were beginning to think that doctors in the witness box loaded the scales in favour of the accused and against justice, partly on account of the new psychology and partly from motives of personal interest.

Dr. R. A. NOBLE said that surprising interest and value had resulted at Yale from combined seminars of men studying psychology and men studying law, and suggested that much valuable after-care work could be done in preparing the home and the parents to meet the problems of a delinquent child who was returned to them.

Dr. M. J. NOLAN expressed his appreciation of the work done by the Conference and the Council.

Dr. HENRIETTA TREVITHICK deprecated strongly the practice of making little girls stand up on a chair in court and explain in full detail what had been done to them by a sexual offender. She thought their depositions ought to be taken privately, preferably by a woman magistrate who would treat them like a mother. She also regretted the appearance in open court of alcholics, often gentlewomen, and the powerlessness of magistrates to help them. She welcomed psychological training for magistrates, if it were the right training.

Dr. J. R. REES said that the Institute of Medical Psychology had run a number of successful discussion groups for probation officers. It also reported to magistrates, and was able to treat a small proportion of cases. Of these—all difficult cases—60 per cent. of the adults and 70 per cent. of the children had remained well. This showed that much could be done by the psychological approach. If only magistrates would worry the Home Office enough, the urgent need for a panel of advisory medical and educational psychologists would soon be met.

Dr. T. RUSHBROOKE commented on the conflicting medical evidence often heard in court.

Prof. MILLAIS CULPIN urged recognition of the fact that dissemination of psychological knowledge was necessary for the protection of the public quite as much as for the sake of the criminal. He paid a tribute to the insight and wisdom of police.

The CHAIRMAN said that doctors were being seriously worried to go to court and use their influence on behalf of their patients; the public were alleging that as a profession doctors were too apt to give their assistance a little recklessly in favour of the alleged delinquent and against the public interest.

Dr. HAMBLIN SMITH, in reply, said that he had seen the most terrible things done in court by the medical witness and such exhibitions threw suspicion on the whole subject of psychological medicine. Happily the evidence of medical officers of prisons was always regarded as absolutely impartial. The provision of expert assistance was purely a matter of expense, and the difficulties could be overcome if the magistrates were determined enough. He regarded the present method of appointment of magistrates as a great public danger.

THE FIGHT AGAINST THE SLUMS IN LIVERPOOL

MEDICAL officers of health have welcomed the call of Sir Hilton Young to abolish the slums. Many local authorities have made considerable headway with their clearance schemes, and the *British Weekly*, in a supplement published on Nov. 23rd, gave an interesting illustrated survey of the steps that are being taken in various parts of the country. Dr. W. M. Frazer, medical officer of health of Liverpool, describes the three methods applied by his local authority to houses marked for demolition. When a number of insanitary houses are grouped together in narrow streets or courts and badly arranged in relation to each other, a clean sweep is made. The authority then either purchases the land and rehouses some of the inhabitants in tenements, or rehouses them elsewhere and notifies the owners that they must demolish. A second method is to form an "improvement area" and this is done with larger areas in which good property is mingled with bad. Some houses are demolished, others are repaired, and by-laws are enforced to prevent overcrowding and ensure proper housing conditions in the future. The third method is to demolish sporadic insanitary houses. One of the principal difficulties in the way of clearance is the provision of alternative accommodation. In a large district like Liverpool rehousing is the responsibility of a separate housing department. After the medical officer of health has taken the proper steps for demolition, the director of housing, under the control of the housing committee, constructs new accommodation. He works in close coöperation with those responsible for the town-planning scheme.

Many of the difficulties in the way of abolishing the slums are legal. Representations and reports have to be made to the committee concerned; notices have to be served on owners of property and other interested parties; evidence must be marshalled for the Ministry of Health inquiry, and if land has to be purchased, valuations and sometimes arbitrations have to be undertaken. The capital expenditure on rehousing may be very large, but owners of property are not always satisfied with the compensation offered them and legal action is not uncommon. One celebrated case, the Minister of Health against the King, ex-parte Jaffe (1930), was brought on the ground that no lay-out plan had been prepared. It went through the Divisional Court and the Court of Appeal to the House of Lords, where the scheme was finally upheld and it was decided that a scheme need not be propounded in a cut and dried form so long as the Minister has the essential facts in front of him.

Repairs are, as Dr. Frazer points out, essential in order to prevent the remaining property from falling into the slum category after the clearance scheme is completed. Local authorities have ample powers under the Public Health and Housing Acts to enforce repairs, and must appoint sufficient staff to undertake the work thoroughly. In connexion with repairs the order of the day is eternal vigilance. In Liverpool last year nearly 58,000 notices were served on owners requiring defects in dwelling-houses to be remedied. Reconditioning, a more complete and expensive form of repairs with some improvements, renders a house really suitable for human habitation at one stroke, and thus has obvious advantages. It was recommended by the Moyne Committee only for houses with an estimated life of 20 years.

LARGE HOUSING ESTATES

Mr. L. H. Keay, the director of housing at Liverpool, considers that the ideal method of housing the working-classes is in single-family houses of comparatively low density on estates with quick and convenient transport to the commercial areas of the town. This means the complete development of model estates. Only failure, he thinks, will result from the segregation of one particular class in one area. The large estate must be looked upon as an entire township, complete with its churches, schools, libraries, public hall, and shops, around which the social life of the tenants will centre. Failure to provide these amenities has often sent many of the new tenants drifting back to the town areas. For rehousing schemes in town areas high-storied flats are essential and must be concentrated on one large site. This means the entire rearrangement of an area in order to leave room for gardens and recreation grounds. Mr. Keay speaks with appreciation of the Karl Marx Hof in Vienna, which is built on a site of 45 acres, only 14 per cent. of which is covered by building. The scheme is a community in itself, with communal kindergarten, library, dental and mental clinics, post-office, baths, and laundries. The architecture is in the modern cubical style. It would be quite easy to equal if not to surpass the Vienna experiment in this country, Mr. Keay declares, if the housing problem were tackled on sufficiently comprehensive lines. Liverpool sets a splendid example; it is to be hoped that every local authority will before long carry out a scheme which will make full use of the opportunities given to it by the new Housing Act and the Town and Country Planning Act. The *British Weekly* is to be congratulated on a thoroughly useful and interesting symposium.

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

MEDICAL RELIEF FOR UNEMPLOYED

THE American system of subsidised medical relief has been inaugurated and, although it takes its origin under the Emergency Relief Administration, there are few who doubt that it represents the beginning of a permanent system of medical relief. Rules and Regulations No. 7 govern "medical care provided in the home to recipients of unemployment relief." The preamble states: "The conservation and maintenance of the public health is a primary function of our Government. In this emergency . . . ." Emphasis is laid upon the conservation of the natural relationship between the patient and his doctor or dentist or nurse. Money is made available for medical care in the home, for bedside nursing care, and for emergency dental care. No bills for hospitalisation are to be incurred, for the Federal Administration regards hospitalisation as a local responsibility, even when the person to be hospitalised is a "transient." As the administration is establishing camps for transients in an effort to bring to an end their aimless wandering in freight cars and by hitch-hiking, and yet is making no provision for hospitalisation of the campers, an awkward situation will be created for those in charge of camps when a transient is smitten with acute appendicitis. From the Federal point of view the need for precaution is apparent, for even the huge sums set aside would soon melt away if medical relief were not hedged about with restrictions.

Medical care is to be provided at an agreed rate and is to be of the same type as that furnished to private patients but not excessive in amount. Such care shall only be available when authorised through regular relief channels. Authorisations for medical care for acute illness will be limited to a definite period and a maximum expenditure or number of visits. Additional medical care may however be authorised after investigation. Obstetric care in the home will be authorised and will include prenatal as well as postnatal care. Medical care for chronic illness will be authorised on a limited basis.

> "Medical care shall not ordinarily be authorised . . . for conditions that do not cause acute suffering, interfere with earning capacity, endanger life, or threaten some permanent new handicap."

Expensive drugs must not be ordered except after consultation with a local medical advisory committee. This committee is to be designated by the State and local medical organisations. These medical organisations will make recommendation as to the fee schedules, but the latter will be finally approved by the State relief administrator. All regularly licenced physicians may participate in working this scheme for medical relief. The local relief agent will keep on file a list of physicians who have agreed in writing to abide by the conditions and restrictions of the regulations.

All this is probably "State medicine," but the conditions are most auspicious for its adoption. Practitioners of medicine who for three years have collected only a small percentage of their bills will not turn away from the security of payment by the State even at reduced rates. Moreover, the guarantee of patient-physician relationship and the establishment of medical advisory committees designated by the regular medical organisations meets in advance some of the most pungent criticisms that have been levelled against State medicine.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

MORAL PROTECTION OF THE CHILD

MEMBERS of Edinburgh women's organisations who have been considering this subject lately heard an address by Dr. W. R. D. Fairbairn, lecturer in psychology in Edinburgh University, on the problem of child assault. He considered it high time that public opinion was better informed, so that adequate measures for the protection of children of both sexes might be devised. The effect of assault upon the victim might be to provoke either bad habits or nervous symptoms, or both. In after-treatment it was best as a rule to allow the child to remain at home, unless the parents were unsatisfactory, and it was a mistake to encourage the child to forget the occurrence by making the subject taboo. He or she must be given a chance of working off the emotions aroused, and so far as possible an objective and unemotional attitude to the unfortunate experience be promoted. As for the offender, Dr. Fairbairn's experience was that penal methods had neither preventive nor remedial value. Most, if not all, adult offenders who committed sexual assaults upon children were abnormal and should be treated along medical rather than punitive lines.

At another meeting Mr. R. Macgregor Mitchell, K.C., suggested the advisability of extending the Habitual Crime Act of 1908 to make it apply to sexual offences against children and young persons. He commented on the evil effects of the slums. Dr. T. M. Murray Lyon said that parents were responsible for most of the aberrations of children. Ignorance of some of the facts was a necessary safeguard of youth; and though some sex instruction should be given, it must be individual. Dr. Drummond Shiels referred to the immense value of such organisations as the boy scouts and the girl guides, and pointed out that the choice to-day was between wrong knowledge and right knowledge. The child could not be told all about sex, but whatever he was told should be substantially true. Dr. D. K. Henderson, professor of psychiatry in the University, moved a resolution urging the Secretary of State to introduce legislation amending the law of Scotland governing sexual offences against children and young persons. He pleaded that the same consideration should be extended to criminal offenders as was now extended to the mentally ill. If these offenders could be caught young, there might be some hope of treatment. He had been surprised to find that in the great majority of cases alcohol played an important part in determining criminal conduct. He also commented on the futility of the present punitive system.

EFFECTS OF REHOUSING SCHEMES

Dr. A. K. Chalmers, formerly medical officer of health for Glasgow, recently read an important paper before the Glasgow Royal Philosophical Society, in which he said that public opinion seemed to be completely formed on the need for slum clearance and rehousing schemes. Experience was teaching, he said, that a very large proportion of the inhabitants of slum areas willingly and cheerfully react to the improved conditions provided by rehousing schemes; that some more respond to methods of re-education in orderly domestic ways; while only a fraction remain for whose particular disabilities a solvent is still needed. The continued existence of the slum had hitherto shielded this refractory or "elusive" group from every form of stimulus to social betterment, and extinction of that shelter would open up new avenues of approach, and suggest different and specialised forms of treatment.

PUBLIC HEALTH AND FOOD PREPARATION

Prof. P. S. Lelean, of the public health department of Edinburgh University, this year presented the diplomas and certificates to the students at the Edinburgh College of Domestic Science (Atholl-crescent). In considering the question of race betterment, he said, despite temporary modern trends, there was no doubt that the big work of the future depended on the motherhood of all countries. Progress was apparent, and that progress would become more definite when we reached the point at which no girl left school without a certificate of efficiency in domestic science. Atholl-crescent was not only training those who were prepared to accept this trust of maternity, but was also educating those who would so train the coming generation that the nation would no longer face the disgrace of a state of affairs whereby 97 per 1000 children born in Scottish towns were dead before the year was out. Miss Wingfield, the principal, said they had enrolled this term 248 new students, just as many as they could accommodate. There were 498 students now taking full courses; 150 taking shorter courses, and a few hundred more coming in for odd lessons and lectures. A feature of the prize-giving was the absence of a large number of the students who had already taken up posts such as those of warden, teacher, matron, canteen superintendent, or cook.

IRELAND

(FROM OUR OWN CORRESPONDENT)

LUNACY CONDITIONS IN IRELAND

Mr. S. T. O'Kelly, Minister for Local Government and Public Health, in a speech made on opening a new mental hospital in County Louth, referred to the possibility of reforms in the law and administration of lunacy. He pointed out that the number of persons detained in mental hospitals, not only in Ireland but in other countries, was steadily increasing. He did not, however, regard this as altogether due to an increase in insanity. There was good reason to think that the boundary lines of what constituted mental disorders had changed from decade to decade, and that to-day many were cared for at the public expense who formerly would have been left to shift for themselves. The mental hospital must become what its name implied—a real hospital—and it must stand more and more in the public estimation as a hospital and not as a place of detention. The present procedure for admission must be altered. At present most patients were admitted as if they were criminals. He would like to see established a system of voluntary admission which would dispense with certification, and he would like to see considerable simplification of procedure in the cases in which the patients had ceased to be capable of expressing a wish. He thought policy ought to move on such lines, and if they found general approval, he had no doubt time would be found for the necessary legislation. He added that the mental hospitals were the only institutions for mental defectives, and many who were defective from birth or from an early age could be managed at home and taught some handicraft. But some would require to be sent to institutions, and they did not improve by being mixed with the ordinary patients of a mental hospital. What was needed was a farm colony on which they could be taught to be practically self-supporting.

MEDICINE AND THE LAW

Nursing-home's Reputation Vindicated

THE result of the appeal in Powell *v.* Streatham Manor Nursing Home is to reverse the substantial award of damages against the defendants for their alleged negligence in looking after one of their patients. The judgment is legally important, as will readily be seen, inasmuch as it shows the Court of Appeal taking the unusual step of over-ruling the trial judge on issues of fact. It is naturally of extreme value to the nursing-home and its staff; the original verdict of negligence, had it stood, was most damaging to their good name. The brief story of the case is that Mrs. Powell entered the home in January, 1930, to undergo hysterectomy. She (and her husband with her) claimed damages for two acts of alleged carelessness in that (1) Nurse A so negligently attempted to pass a catheter into her as to perforate her bladder, and (2) Nurse B negligently dropped her when attempting to lift her single-handed on to the bed-pan, thereby causing an umbilical hernia and bursting the stitches of her operation wound. Mr. Justice Horridge tried the case (without a jury) for several days. He found for the plaintiffs on the first, but not on the second, allegation of negligence, and he awarded the husband £977 for his special damage and expense, and the wife £2500 for her pain and suffering. It was obviously an award which the defendants must challenge at all costs; it is therefore satisfactory that Lord Justice Slesser should have been able to say, when reviewing the case, that on a proper examination of the evidence they stood acquitted of all negligence or impropriety.

The patient, it seems, was taken into the home on favourable terms; the genesis of her complaint of negligence synchronised, the Court of Appeal was inclined to think, with the delivery of a demand for payment of a small sum for fees; the allegation about the misuse of the catheter was certainly not prompt and clear. The nursing-home witnesses said at the trial that they had none but rubber catheters in the home. There was substantial medical evidence that, if a rubber catheter were used, the bladder could not have been perforated. Mr. Comyns Berkeley, consulting obstetric surgeon at the Middlesex Hospital, said he had never heard of any sort of catheter perforating the bladder. He offered another possible explanation when he stated that he had performed hysterectomy possibly some 5000 times and admitted that he had more than once injured the bladder during the operation. Mr. S. G. MacDonald, gynæcologist at the West London Hospital, stated that he was called in perhaps two or three times a year in cases where the operation had caused such an injury. The Court of Appeal, obviously impressed by this evidence of how the bladder might have been perforated without any negligence, turned to the plaintiff's own account of what had occurred. Mrs. Powell said that while Nurse A was passing the catheter she felt great pain and knew it was not being done in the right way; she protested, but Nurse A said "shut up, Mrs. Powell, I have done this passing of a catheter before." Mrs. Powell says she rejoined, "Yes, but it will be the last," whereupon, according to her story, Nurse A lost her temper and with a violent and brutal prod forced the catheter, injuring the bladder. The Master of the Rolls refused to believe that Nurse A, stated by the doctors to be one of the best nurses to be obtained, a careful nurse of long experience, could have been guilty of such callous brutality. Lord Hanworth proceeded to emphasise certain important dates. Mrs. Powell left the home on Feb. 12th, 1930. More than two years later a letter was written to her on behalf of the home to collect an outstanding debt of 8 guineas, with a hint of legal proceedings to enforce payment. Her husband replied briefly that he was making the nursing-home a satisfactory offer. This offer was a letter to the defendants to say that a legacy of £500 was coming to him; he had a heavy bill of some £300 to pay a doctor; when the legacy was received he would pay the doctor and then settle the defendants' account. The Court of Appeal found it significant that, though Mr. Powell's letter did assert that his wife's stay in the house had been prolonged by the carelessness of a night nurse (apparently a reference to the alleged incidents of careless lifting the patient to which the hernia was attributed), he said not a word about the catheter and the perforated bladder. Lord Hanworth found it impossible to believe that the husband could have written such a letter (with his wife's knowledge as was admitted) if he and she then believed they had suffered an injury costing them nearly £1000 through the brutality of Nurse A. The next move from the plaintiff's side was a solicitor's letter inviting the defendants to admit negligence. The defendant's solicitor asked what the negligence was. Then for the first time, on April 1st, 1932, there was definitely formulated (in a letter from plaintiff's solicitor) the allegation that the bladder had been perforated by the negligent application of a catheter. The Master of the Rolls said it was startling to think that the claim remained quiescent for over two years until the demand for 8 guineas was made. Another noteworthy fact was that Mrs. Powell had visited the home not long after her discharge therefrom to ask advice as to the use of some appliance; this did not look as though her mind was then full of her callous ill-treatment.

The claim for the hernia incident had been dismissed by Mr. Justice Horridge at the trial, but Lord Hanworth went over the relevant evidence again because its non-acceptance threw light upon Mrs. Powell's credibility. Then, returning to the catheter incident, he examined the conflict of oral testimony and alluded to the "very useful" evidence of the written day-and-night reports of the nurses. This documentary evidence was fatal to the plaintiff's claim and he declined to believe that the entries had been wickedly inserted to bolster up a false case by the nurses. Having come to the conclusion that the nursing-home was not guilty of "this terrible negligence," he gave judgment that the appeal must be allowed. Lord Justice Slesser agreed; he laid stress on the undisputed statements that before the operation Mrs. Powell was suffering from emotional attacks which she called brainstorms and for which she was being given morphia. He gave other reasons for not accepting her version and he found the evidence of her own doctor (who had performed the operation) unreliable and not to be accepted in any particular where it was in conflict with that of the defendants' witnesses. Lord Justice Romer concurred, adding fresh instances of inconsistency between Mrs. Powell's testimony and the written documents. The three members of the Court were thus unanimous, but it is possible that the case may be taken to a higher tribunal, since it can certainly be represented as an unusual intervention by the Court of Appeal in view of the definite findings of fact in the court below.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

The following appointments have been notified: Surg. Comdrs. J. F. H. Gaussen to *Vivid*, for Plymouth Hospital; P. L. Gibson to *Victory*, for Haslar Hospital; R. W. Nesbitt to *Pembroke*, for R.M. Infirmary, Chatham; G. R. McCowen to *Victory*, for R.N.B.; R. J. Inman to *Osprey*; E. B. Kelly to *Renown*; H. B. Parker to *Pembroke*, for Chatham Hospital; and J. R. Brennan to *York*.

Surg. Lt. Comdrs. F. C. M. Bamford to *Ganges*, for R.N. Sick Quarters, Shotley; and J. V. Williams to *Despatch*.

Surg Lts. A. K. Stevenson to *Curacoa*; and M. H. Adams to *Alecto*.

Surg. Lt. (D) F. R. McN. Willis to *Pembroke* for R.N.B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. T. C. Stevenson has been promoted to Surg. Lt. Comdr.

ARMY MEDICAL SERVICES

Maj.-Gen. H. E. M. Douglas, V.C., late R.A.M.C., half-pay list, retires on retd. pay.

ROYAL ARMY MEDICAL CORPS

Capt. W. A. G. Bell relinquishes his temp. commn.

The undermentioned Lts. (on prob.) are confirmed in their rank: J. N. Concannon, J. P. Douglas, and C. King.

TERRITORIAL ARMY

Maj. J. A. C. Scott to be Lt.-Col.

H. Temkin and J. W. Laird to be Lts.

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj. E. V. Connellan having attained the age-limit retires and retains his rank, with permission to wear the prescribed uniform.

Capt. E. D. Ellis having attained the age-limit relinquishes his commn. and retains his rank.

INDIAN MEDICAL SERVICE

Lt.-Col. (temp. Maj.-Gen.) Sir Leonard Rogers, retd., relinquishes the temp. rank of Maj.-Gen. on ceasing to be empld., and is granted the hon. rank of Maj.-Gen.

Lt.-Col. F. B. Shettle retires.

Enlargement of North Lonsdale Hospital.—Commander C. W. Craven recently opened the new Pritchard memorial wing which has been erected with a legacy of £3626 from the late Miss F. M. Blower. The new building contains a ward of 14 beds and one of a single bed with the necessary services.

GENERAL MEDICAL COUNCIL

PRESIDENT'S ADDRESS

IN opening the 138th session on Nov. 28th, Sir Norman Walker, the president, said: "Our youngest member, Dr. Christine Murrell, died before she had taken her seat among us. I had not the privilege of her acquaintance, but from what I learn from those who had, I am sure she would have been a really valuable colleague. We miss to-day two familiar faces. We bade last May a formal farewell to Sir Donald MacAlister. None of us knew the Council without him, and the memory of his work will never be forgotten. All of us heard with regret of his serious illness in the summer, but once again his amazing power of recuperation came to the rescue: his interest in the work of the Council is as keen as ever, and I am glad to be able to report that his counsel is again available to his successor. Sir Donald's place as father of the Council was taken by Sir John Moore, and to him also we have to say adieu. He made his last appearance as a member of the Council at a meeting of the Pharmacopœia Committee in October, after completing 30 years of service as the representative of the Royal College of Physicians of Ireland and 23 as chairman of the Public Health Committee. He served 30 years on the Pharmacopœia Committee and 27 on the executive. Sir John occupied a position on the Council all his own. His courtesy endeared him to us all, and we all wish for him peace and happiness in the autumn of his days."

He went on to welcome in Sir Donald's place Prof. E. P. Cathcart, as the Glasgow representative from whom help in the consideration of the ever-present problems of medical education might be expected; Prof. Moorhead, as the representative of the Royal College of Physicians of Ireland in succession to Sir John Moore; and two direct representatives, re-elected unopposed for England, Dr. E. K. Le Fleming and Dr. J. W. Bone.

THE STATUS OF THE COUNCIL

The President then quoted a letter written 75 years ago by Sir Benjamin Brodie, the first president of the Council, in which Sir Benjamin defined the status of the Council in the following words: "The Medical Council is appointed by Parliament to act in those matters which affect the Medical Profession, both on the part of the Profession and of the Public. It is not to be supposed that they have any interests of their own to serve; and it is as much out of their way to proceed by way of Petition as it would be for the Board of Trade to do so. Where they conceive that any alteration is required in laws concerning the profession, it is their duty to represent this in the proper quarter, not as petitioners, but as coadjutors of the Government in one department of the public business." These words, said the President, would bear repetition.

MEDICAL EDUCATION IN INDIA

"Reciprocity of medical practice within and outwith the British Empire," said the President, "is administered by this Council under the provisions of Part II. of the Medical Act of 1886, and, in accordance therewith, H.M. Queen Victoria declared by order in Council that this part of the Act should apply to British India on and after July 1st, 1892." Here, said he, are the words of the Act:—

> "Her Majesty may from time to time by Order in Council declare that this part of this Act shall be deemed on and after a day to be named in such Order to apply to any British possession or foreign country which in the opinion of Her Majesty affords to the registered medical practitioners of the United Kingdom such privileges of practising in the said British possession or foreign country as to Her Majesty may seem just; and from and after the day named in such Order in Council such British possession or foreign country shall be deemed to be a British possession or foreign country to which this Act applies within the meaning of this part thereof."

Thereafter, application may be made by any medical degree or diploma-granting body in the country concerned to have its degree or diploma "recognised." This "recognition" is the act of this Council, who must be satisfied that the diploma furnishes a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery. There is no reference in the Act to the methods to be employed by the Council in arriving at their decision, but the fact that most of the Possessions (I am using the word of the Act) have official organisations controlling medical education and registration within their own boundaries provided a ready means of ascertaining and evaluating their standards. The outstanding exception was India, where no such central organisation to which we could apply for official information existed, and the Council had no alternative but to deal with the provincial licensing bodies individually. First, in 1892, the degrees of the University of Bombay were recognised, and, in 1893, those of the Universities of Calcutta, Madras, and the Punjab. Allahabad followed in 1914, and Lucknow in 1921.

Here is what Sir Donald MacAlister said in his address to the Council on Nov. 25th, 1930:—

> "The India Office has communicated to us the report of a conference of provincial and university representatives, held at Simla during the summer, for the purpose of considering the creation of an All-India Medical Council. After a full and frank discussion of the position, it was agreed that the creation of such an All-India organisation, for the purpose of maintaining a uniform standard of qualifications for the graduates of Indian universities, is essential and acceptable in principle. Resolutions concerning the constitution and functions of the proposed Council were adopted, and commended to the Indian Government as the basis of central legislation; and it was urged that without undue delay the necessary steps be taken to bring the new law into operation. The Council cannot but express its satisfaction that a solution of the vexed question of Indian medical standards, applicable to the whole of British India, should be practically envisaged by the Government of India; and that the responsibility for maintaining these standards, especially in relation to their extra-Indian aspects, should be assumed by a central Indian body having statutory authority. The application of Part II. of the Medical Act, 1886, was made in 1892 by Her Majesty in Council to India as a whole, without reference to its provinces. The Council has accordingly, throughout its discussions on the subject of Indian medical qualifications, continued to look to the central government for the information and the guarantees without which its functions under the Act cannot be properly performed. It therefore counts with confidence on the speedy establishment of a central board or council for India, comparable with the medical boards or councils of other parts of the Empire with which this Council is in regular official communication; and to which it can refer for authoritative information on all questions of local professional qualifications and standards."

On Nov. 23rd, 1931, the Executive Committee considered a communication from the India Office enclosing a copy of the revised draft bill to establish a medical council in India. The committee resolved:

> "The Executive Committee have considered the draft bill and the accompanying communications from the India Office, and recognise with satisfaction that it represents a well-directed effort to establish by Statute a body which by its constitution and functions is designed

to maintain a satisfactory minimum standard of medical qualification for admission to the proposed Indian register. The Executive Committee are of opinion that, if carried into law, the Bill will conduce to the improvement of Indian medical education, and serve the best interests, both internal and external, of Indian medicine in general."

Few medical bills pass through any legislature without prolonged and ardent discussion, and India has proved no exception to this experience. Much of the discussion centred round the claim for admission to the Indian register of the licentiates educated in Indian medical schools, with which this Council are not concerned, and the difficulty has been solved by dropping the proposed Indian register: the Act establishes a council for medical education and standards only.

I said in India, and I repeat from this platform, that this Council would welcome the establishment of such an all-India medical council, which by inspection and visitation and the publication in its minutes of the reports of the inspectors (as is done in this country) would supply the Executive Committee with the information which is necessary to enable them to discharge the duty laid on the Council by Part II. of the Medical Act of 1886. For the last 11 years this Indian question has rarely been far from my thoughts, and I have the support of the Executive Committee when I say that no effort on our part will be lacking to make the Medical Council of India, constituted under the Act, a success.

OTHER EASTERN INTERESTS OF THE COUNCIL

The President said: "Part II. of the Medical Act of 1886 has been applied to Ceylon, Hong-Kong, and the Straits Settlements. We await a report from Ceylon dealing with the further progress made by the Ceylon Medical College along the lines of Sir Richard Needham's suggestions. Through the Colonial Office, the Executive Committee received invitations from the University of Hong-Kong, and the King Edward VII. College of Medicine, Singapore, to send a visitor to be present at their examinations. Sir Richard Needham accepted our invitation to act in this capacity, and is due in Hong-Kong this week. I saw the Vice-Chancellor of Hong-Kong before his departure for the East in August, when he expressed the hope that he might expect not only visitation and inspection, but also helpful advice. That we may be sure Sir Richard will be ready to give; they could not easily find a more competent adviser."

THE PHARMACOPŒIA COMMISSION (1933–1936)

The President then announced the personnel of this Commission in the following words: "Dr. A. P. Beddard, consulting physician to Guy's Hospital, chairman; Dr. O. L. V. S. de Wesselow, professor of medicine and director of the medical clinic at St. Thomas's Hospital; and Dr. D. Hunter, assistant physician and medical tutor at the London Hospital, representing clinical medicine; Dr. J. A. Gunn, professor of pharmacology in the University of Oxford, representing pharmacology; Dr. P. Hartley, director of standards at the National Institute for Medical Research, who brings to the Commission special knowledge of therapeutic substances; Mr. R. R. Bennett, B.Sc., F.I.C., chairman of the British Pharmaceutical Conference in 1928 and 1929, representing general pharmacy; Mr. Thomas Tickle, B.Sc., F.I.C., public analyst for the county of Devon, representing pharmaceutical and analytical chemistry; and Mr. Bernard Howard, B.Sc., F.I.C., vice-president of the Institute of Chemistry from 1930 to 1933, representing general chemistry."

"The Commission," added the President, "embark on their duties not only equipped with the experience of their predecessors, but endowed with opportunities not available to them. Thanks to the happy relations existing between the three bodies working under one roof, it has been possible, largely through the generosity of the Dental Board, to establish a laboratory where most of the necessary routine research work will, in future, be done under the direct supervision of the very efficient secretary of the Commission."

A vote of thanks to the President for his address was proposed by Mr. F. J. Steward, seconded by Sir Robert Bolam.

The Council then passed to the consideration of penal cases, which, in accordance with custom, were held in public, the Council deliberating on its judgments in camera.

PANEL AND CONTRACT PRACTICE

Difficulties over Emergency Treatment

The regulations in the insurance code about emergency treatment are not very precise, and there is a dispute about them between the London panel and insurance committees. Take an insured person who falls downstairs at home and breaks a leg. That is quite obviously an emergency, and the proper procedure for his relatives is to send for his own insurance doctor. If neither this practitioner nor his deputy is available, it is the duty of any other insurance practitioner who may be summoned and is available to give necessary treatment, and forthwith to inform the insured person's own doctor that he has done so. The insurance committee reads into this regulation that the insured person must not in any case pay for the treatment. Discussion has turned in one case on what is meant by *available.* It is not likely that any responsible doctor in the case cited would, if at home and if he received the message, refuse to go; but in another case the responsible doctor was at home, he did receive the message, but he refused to go to the case—which had become suddenly worse—because, he said, he could not do any good by going. Was he available? The relatives in this case called in another doctor who sent in a claim for emergency treatment. This was disallowed by the panel committee on the ground that the responsible doctor was available, but of his own volition refused to attend. The relatives would, therefore, probably have to pay for the services of the second doctor and if aggrieved have the right to complain against the first doctor for refusing to go when sent for. If in the fracture case the responsible doctor had been away from home, and therefore obviously not available when the message was sent, no difficulty would arise in paying the proper fee to the attending doctor from the money due to the responsible doctor.

But if, for example, the harassed relatives do not send for him at all but call in someone else—it may be for quite a good reason—the position becomes more difficult, and it is this sort of case that has led to disagreement. The procedure is for the attending practitioner to send in a claim to the insurance committee for a fee on account of the service he has rendered, unless he has asked for a fee and been paid at the time, which he should not do. His claim is forwarded to the panel committee which also receives observations on the case from the responsible practitioner. Under Clause 3 of the Distribution Scheme the panel committee has power "to disallow any item of account." They read into this regulation that they only have power to decide whether the claim for payment is a proper one. Since emergency treatment can only apply to the first attendance it is difficult to understand why the word *any* is used in this regulation. If after consideration the panel committee decides to disallow the claim, the attending practitioner does not get paid at all unless he can obtain a fee from the insured person. On this point the insurance committee says in effect: here is a purely professional body purporting to decide whether an insured person shall pay fees to an insurance doctor for work which the insured person certainly thought necessary (and presumably the attending doctor thought so too because he gave the treatment) when the insured person has been given no opportunity of being heard himself, and when he has no representatives of his class on the tribunal which is considering the case. In the particular fracture case mentioned the attending doctor charged the patient 5*s.*, and the patient then wrote to the insurance committee demanding the return of the fee under Clause 7 (iii.). The executive section of the medical benefit subcommittee considered this application for the return of 5*s.*, and decided to allow it. They informed the attending doctor that 5*s.* would be deducted from his pay, and advised him that he could get it back under the emergency treatment scheme, as this was obviously an emergency. When the decision came to the notice of the panel committee it said at once to the insurance committee: you have no power to decide what is an emergency or rather what services should be paid for under the emergency treatment scheme. That is *solely for the panel committee to decide*.

The Ministry, being asked by the panel committee to give a ruling, expressed the view that whilst there is something to be said on both sides it would have been better, having regard to the intention of Clause 3 of the distribution scheme, for the panel committee to determine whether an emergency fee shall be payable, and for the insurance committee to refrain from any action until the panel committee has considered it. Independent action by the committee *might* prevent the doctor providing treatment from receiving any fee for services for which he is clearly entitled to be paid either by the insured person or by the insurance committee. It should be noted that under Clause 7 (iii.) of the terms of service, if the committee decides to secure the withdrawal of an account or the refund of the fee(s) charged, the committee *shall* credit the practitioner with the remuneration to which he would have been entitled if the applicant had been attended by him as a temporary resident. It is argued that this clause must override clauses of schemes designed to carry out these terms of service. It thus appears at first sight that if, after the panel committee had decided that some particular incident was not an emergency and the insured person had paid the attending doctor for the attendance, the insured person would have the right to reclaim the fee under Clause 7 (iii.), and if such claim was allowed by the insurance committee it would then *have* to pay temporary resident fees to that doctor for the attendance after deducting the actual fee paid by the patient from his remuneration. In other words he would receive about 12*s.* 6*d.* instead of 5*s.* But Clause 7 (iii.) only applies where the insured person does not represent himself to be an insured person. Such a state of affairs could exist if the attending doctor charged and received from the patient (say 5*s.*), provided the patient was not living outside the area of practice of the responsible doctor. The 12*s.* 6*d.* in this case would be deducted from the fund, and would not come out of the pocket of the responsible practitioner as it would do if the case were reported as, and agreed to be, an emergency *treatment on an insured person under the Act*.

The position is unsatisfactory. The medical service subcommittee and not its executive section is the proper tribunal to decide claims arising under Clause 7 (iii.), for, apart from emergency claims, points often come up for decision in which both doctor and patient are affected. A decision can then only be fairly arrived at by a tribunal consisting of an equal number of doctors and laymen with an independent chairman.

PUBLIC HEALTH SERVICES

Local Incidence and Prevention of Diphtheria

In his statistical review for 1925 the Registrar-General drew attention to the change which had taken place in the seasonal distribution of diphtheria, a sharp peak in the mortality-curve occurring in January during the years 1921-25 instead of a sustained elevation in the last three months of the year, which had been a feature of the curve in the latter part of last century and the first decade of the present. The curve of incidence, as distinct from mortality, showed two peaks, the first occurring in October separated by a depression in December from a slightly higher maximum in January coinciding with the peak of mortality. Since that report diphtheria has maintained this distribution with slight fluctuations, although in 1931, 1932, and 1933 there has been a tendency for the maximum incidence to occur at the end rather than at the beginning of the year, January, 1931, being the last occasion on which the incidence was heavier than in the preceding late autumn. It may be that diphtheria is beginning to undergo one of those secular changes which characterise so many of the endemic communicable diseases. If not, its behaviour during the present year suggests that the volume of cases and, therefore, the mortality, may be high during the winter upon which we have now entered. In the four weeks ended Oct. 7th, 4540 cases were recorded as against 3538 for the corresponding period last year, and the rise has been sudden. The number of cases notified between July 15th and Oct. 7th "is nearly 20 per cent. in excess of that for the corresponding period of 1932." In the following four weeks, ended Nov. 4th, 5110 cases were notified as against 4062 in the same period of 1932.[1]

The sudden rise in diphtheria is causing alarm in some areas, especially in the north. In Oldham concern has been caused by the involvement of a school in which, among the infant scholars alone, there were four deaths in June, July, and August, and the mixed department became involved in October. At Dunsdale, a small village near Guisborough, 13 cases had occurred by the middle of October, obviously a heavy rate of prevalence for a community of this kind. Similar reports have been received from other parts of the country. As is usual in such circumstances the time-honoured remedies are brought out and aired. Medical officers are being pressed to close schools, a practice which may be of some avail in isolated rural areas, but of none in towns. Disinfectants are being freely used in class-rooms, usually at the demand of teachers. The state of the drains, of course, is being questioned. Of the more enlightened measures, extensive swabbing of school-children is being done with the object of detecting carriers. Hospital accommodation, overtaxed, is being temporarily or permanently extended. Whatever steps are taken local epidemics are coming to an end, as they inevitably do, and ceasing therefore to be of local interest except to those families who have actually suffered.

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[1] Weekly Epidemiological Record, Health Section, League of Nations, Nov. 9th and 16th, 1933.

IMMUNISATION

The opportunity is being seized by medical officers of health to urge the public to accept immunisation as the only sure prophylactic. It is of interest therefore to examine the extent to which it has been adopted throughout the country, and for this purpose some of the larger towns may be considered. The early and sustained efforts made by the public health departments in Aberdeen and Edinburgh are well known, but it is notable that in Glasgow, by far the largest city in Scotland, practically nothing has been done, except for the protection of hospital staffs. As the writings of Dr. J. Graham Forbes have shown, a good deal has been done among London school-children. Last year Dr. Elwin Nash reported a big drive in Heston and Isleworth. So far attention appears to have been concentrated upon school-children; but, if the American finding that no influence upon the total incidence is to be expected until at least 30 per cent. of children under 5 years of age are protected is taken as a guide, it is this age-group which deserves special attention.

Some information on this aspect of the question is to be found in the annual reports of medical officers of health. For instance, immunisations have increased in Birmingham from 1099 in 1925 to 11,566 in 1932, the total in these years amounting to 34,443. The number of preschool children treated is not stated, but if the proportion which held good in 1932 (333 out of 11,566) is applicable to the total, not more than 1000 children of this age—and probably much fewer—have been rendered immune among a population of about 79,500. In Liverpool the total number inoculated by the end of 1932 and remaining under 5 years of age was 1317 among a population of 82,443, whereas 8101 over this age had been rendered immune. In Manchester effort appears to have been concentrated upon the young child through the welfare centres, so that the age-group with which we are concerned accounted for 2820 immunisations in 1932 out of a total, excluding hospital cases, of 3714. The age-group population is about 70,000, and as the scheme has been in existence since 1928 and, no doubt, a proportion of the hospital cases are under 5, the aggregate effect must be considerable; but it would be useful if actual figures were available to show how many of the immune children are still under 5. In Cardiff 6944 immunisations had been completed by the end of 1931, but only 973 of these children remained under 5 at the end of that year. Approximately 200 of them were over 5 years of age by the end of 1932, and only 76 fresh immunisations at these ages are reported for that year, so that less than 900 of a population numbering 17,462 had acquired artificial immunity. In Leeds, of a population in the age-group of 34,048, the number immunised at welfare clinics in 1932 was 737, and probably a large proportion of 495 dealt with by private practitioners were of this age. No figures as to the total number of immunised children remaining under 5 years of age are given. In Hull, where the heavy incidence of diphtheria has been causing anxiety, special efforts to obtain consent to immunisation in 1932 have resulted in only 437 treated to a conclusion, the ages not being stated. The aggregate effect on incidence must therefore be negligible in all these towns.

Generally the annual reports indicate that medical officers of health are anxious to persuade their councils and the people to accept prophylaxis, especially in areas where the prevalence has been high in recent years. A large number of towns have set up schemes for utilising the general practitioner or the facilities provided in connexion with the school medical service and child welfare. Many complain of the poor response. A few have analysed their results in order to determine the relative incidence of diphtheria in immunised and non-immunised groups. For instance, it is shown that in Liverpool the incidence was 12·6 per 1000 among children under 10 years of age who had not been inoculated, whereas the rate among the immunised at these ages was 1·8. In Cardiff (1931) the corresponding rates for children under 13 were 8·8 and 3·7; in Bristol, for the age-group 1–14, 4·8 and 1·2. These facts, together with the incontrovertible evidence obtained among specially exposed populations, such as hospital staffs, afford a sufficient body of evidence to justify intensified effort to popularise immunisation. The Minister of Health has encouraged local authorities to provide facilities for prophylaxis, but much more requires to be done to further its general acceptance. Perhaps the trend of incidence referred to at the beginning of this note will afford an opportunity for doing so during the present winter. It would be much more likely to be practically successful, however, if some of the methods of speeding up the development of immunity and reducing the number of operations which have recently been published were proved to be reliable and the necessary material were made widely available at a reasonable cost.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 18TH, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 1 (last week 1); scarlet fever, 4381; diphtheria, 1311; enteric fever, 32; acute pneumonia (primary or influenzal), 922; puerperal fever, 46; puerperal pyrexia, 94; cerebro-spinal fever, 21; acute poliomyelitis, 16; encephalitis lethargica, 11; dysentery, 12; ophthalmia neonatorum, 67. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 21st–22nd was as follows: Small-pox, 2 under treatment, 3 under observation (last week 3 in all); scarlet fever, 3411; diphtheria, 2111; enteric fever, 20; measles, 429; whooping-cough, 136; puerperal fever, 22 mothers (plus 4 babies); encephalitis lethargica, 253; poliomyelitis, 4; "other diseases," 189. At St. Margaret's Hospital there were 8 babies (plus 3 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 2 (1) from enteric fever, 11 (1) from measles, 13 (1) from scarlet fever, 11 (0) from whooping-cough, 51 (8) from diphtheria, 52 (13) from diarrhœa and enteritis under two years, and 61 (13) from influenza. The figures in parentheses are those for London itself.

Liverpool reported the only death from enteric fever outside London. Three fatal cases of scarlet fever occurred at Bolton and at Sunderland, 2 at Newcastle-on-Tyne. Liverpool reported 3 deaths from whooping-cough. Of the deaths from diphtheria, 8 were reported from Liverpool, 6 from Hull. Four deaths each at St. Helens and Birmingham were attributed to influenza, 3 at Salford.

The number of stillbirths notified during the week was 250 (corresponding to a rate of 48 per 1000 total births), including 38 in London.

CORRESPONDENCE

DIET AND WEIGHT

To the Editor of THE LANCET

SIR,—Hyperbole is always a dangerous weapon to use, and my letter to you, though designedly hyperbolic, has led to a certain amount of foolish chatter. In gratitude for the courtesy of Dr. Byrom and Dr. Hunter, I should be glad if you would allow me to underline some of the inferences which may justifiably be drawn from my previous letter.

To be content with things as they are is a state of mind which to-day is very uncommon. Like the Jewish nation 2000 years ago we persist in looking for a sign, and it is to this lack of contentment that we owe such varying modern phenomena as patent medicines, unorthodox practitioners of the healing art, fantastic reliance on word-of-mouth testimony, a passion for constant titillation of the senses, and a thousand other expressions of the present cry for signs and wonders. He who tries to remain detached from this emotional whirlpool and who calls to mind the admonition, "Be still, and know that I am God," lays himself open to the charge of being desirous of hindering progress. The current of life to-day is most commonly of the alternating variety, and we seem to care little whether we go forwards or backwards so long as we move. It is not, therefore, out of place that a voice should occasionally be raised acting as a reminder that progress and regress are not the same thing, and that alteration is not necessarily improvement. In the comparatively unimportant question of the optimum amount of fat wherewith a human being should be clothed, I think that the life assurance companies and the sexual selection of the boyish outline as the highest form of human beauty are the two factors which operate most successfully in spreading the belief that fatness is both æsthetically repulsive and vitally dangerous. The swing of time's pendulum will right the second belief, which incidentally is only held by a minority of the inhabitants of the earth. The views of assurance companies, however, are much more dangerous, for these corporations have become high priests of Mammon. Since this worship has such a multitude of adherents, the beliefs imposed upon the faithful are likely to be long-lived.

Ultimately the question of bodily fat and its advantages or disadvantages can be narrowed down to this: is it better for the progress of the human race that men should die from fatty infiltration of the myocardium between the sixth and seventh decades of life or that, to obviate this, numbers of human beings should be deprived of fat insulation and as a consequence suffer from such common modern complaints as neurasthenia and lack of emotional balance? There are times when one feels that no one who works in a laboratory ever makes any pronouncement without the magic preface "Science teaches," or "It is an accepted fact." Am I being very reprehensible if as a clinician I state my belief, based purely on impressions and with no equational verification, that too little fat is productive of many asthenic conditions both of mind and body, and that for every heart saved from fatty degeneration there are a multitude of nervous and physical shortcomings which in differing manifestations form the many unnamed diseases of the twentieth century? I am not concerned with such clear-cut syndromes as myxœdema or Graves's disease, but I confess that I should prefer the former to the latter. It is certainly within my observed experience that when I am fat I can face the blows of fortune with comparative equanimity, but that when I diet myself and lose weight the necessary pin-pricks of daily life become fraught with almost mortal significance.—I am, Sir, yours faithfully,

CHRISTOPHER HOWARD.

Harley-street, W., Nov. 27th, 1933.

SUPRACONDYLAR FRACTURE OF THE HUMERUS

To the Editor of THE LANCET

SIR,—Your leading article of Nov. 25th raises issues in the treatment of this injury which are very important; but there are certain points to which I should like to draw attention.

The name supracondylar does not accurately describe the most important fracture in this region. As its name implies, the line of supracondylar fracture is above the condyles; it is, too, practically always above the upper margin of the olecranon fossa and is therefore outside the capsule of the joint. This fracture is relatively uncommon; it may be regarded as a fracture of the shaft for purposes of treatment and as a rule presents no undue difficulties. On the other hand, the line of the transcondylar fracture is at or very near the level of the condyles and passes directly through the olecranon fossa, or commencing in the region of either condyle passes obliquely to, or towards, the epiphyseal line. The important point is that the line of this fracture is within the joint cavity, the soft structures of which are damaged and *inevitably* become involved in callus-formation during repair, while in addition the olecranon fossa and the grooves of the lower end of the humerus are filled with callus which must necessarily be absorbed and remodelled before full movement can be expected. This is a very common fracture, in fact almost the most common in children; numbers are seen in a fracture department; and, when there is displacement of the fragments it always presents difficulties in treatment—on occasion, danger to the arm itself.

The aim of immediate treatment is to obtain a perfect anatomical alignment and to maintain this by keeping the elbow as completely immobilised as is possible. Reduction can usually be obtained by manipulation if this is carried out within a few hours of the injury; failing this, or should the effusion into the tissues be such as to threaten the general circulation of the limb, an open operation should be considered to relieve the tension and replace the fragments.

It has been generally taught that after reduction the arm should be fixed with the elbow flexed. Flexion of the elbow does produce traction on the lower end of the humerus and by tightening the tendon of the triceps exerts a certain splinting effect. But to be effective flexion must be acute and this position is so dangerous that it should not be used. In my opinion flexion that is not forced is of but little value as it fails to maintain, what is so important, an absolute immobilisation; hence shifting and slipping of the fragments is apt to occur, causing not only excess of callus to be formed, but also to produce eventually those imperfections on which Avellan lays stress. Apart, therefore, from a dislike of depending on the position of a limb itself to maintain fractured fragments in position, I do not think in these particular fractures it affords sufficient protection or security. Therefore, it has been my practice for some time now, after reduction, to encase the whole arm in a light plaster from the axilla to the base of the fingers, with the elbow at a right angle of flexion and the forearm and hand in a position of rest, that is in nearly full pronation; care should be taken that the plaster has set before traction on the arm is relaxed. With this method there is little fear of the fragments slipping, nor of any interference with the circulation, and owing to the immobilisation afforded a minimum of callus is thrown out. The plaster is left on for some four or five weeks and after this voluntary movements are encouraged.

Whether a true myositis ossificans occurs after these injuries is, I believe, very doubtful. Bony spurs and bridges may follow transcondylar fractures in children, but are more often seen in adults after an injury in which small, often minute, fragments of bone have been separated off the articular surface or condyles of the humerus, the head of the radius or coronoid process of the ulna—e.g., after a dislocation of the elbow. The new bone-formation, in my experience, seldom if ever commences in the muscles but in the soft structures of the joint continuing as a bony infiltration of the capsule, a fact which renders treatment almost hopeless. It teaches us, however, that all injuries, especially of the elbow-joint with separation of bony fragments (the smaller the more dangerous they are), should be kept immobilised during the callus-forming period and that voluntary movements only should be employed afterwards.—I am, Sir, yours faithfully,

London, W., Nov. 26th, 1933. F. D. SAXER.

DIVERTICULA OF THE SMALL INTESTINE

To the Editor of THE LANCET

SIR,—I am in agreement with Mr. Mason about the origin of duodenal diverticula, but I disagree with him about the origin of those diverticula which, appearing in large numbers and studding the mesenteric border of jejunum and even extending into the ileum, are found occasionally by the surgeon. But as the disagreement may be due to a difference in our classification I will give my own subdivision of jejuno-ileal diverticula.

Group 1.—Diverticula, the result of adhesions, glands, cicatrices, &c.—an anomalous and uninteresting group of individual cases.

Group 2.—The diverticula associated with the incomplete obliteration of the vitello-intestinal duct (Meckel) interesting but not to be considered here.

Group 3.—Diverticula of enterogenous origin—i.e., arising from those cysts which resulted from the vacuolation of those nests of cells described by Lewis and Thyng which lie adjacent to the embryonic gut. These cysts may remain intact and have been described in the mesentery or in the wall of the gut. Should these cysts form a connexion with the lumen of the intestine then we have the production of enterogenous diverticula. The condition has been dealt with very fully and with great clarity by Arthur Evans (B.J.S., 1929, xvii., 34).

Group 4.—The "idiopathic" variety. The salient features of the condition are the appearance in large numbers, 50–500, of large diverticula (average size that of a golf ball) which spring from the upper small intestine and pass between the leaves of the mesentery. They are found most often in the male sex and usually in the later years of life. They are all related to the point where the artery pierces the intestine and are for the most part of the "false" variety—i.e., the sac is a herniation of the bowel mucous membrane through the muscle—although in the small sacs there may be found many strands of muscle.

Group 3 is admittedly congenital in origin. The cases are few in number. Group 4 is, I contend, undoubtedly of an acquired origin, and for the congenital theory to be the correct one it must satisfy the following queries and facts :—

1. Why is the disease found only after middle life and never in the fœtus or the young ?
2. Why is there a preponderance in the male sex ?
3. Why are the intermediate stages of production never seen ?
4. In many of the recorded cases—Astley Cooper, Godard, &c.—there was a stricture below the affected region. Could this not be a factor in the causation ?
5. All the large sacs are "false" (herniæ of mucosa alone); the smaller admittedly may show muscle in the early stages.
6. The herniæ take place at the mesenteric border, not because the pressure is greatest at that point, but because the peritoneal coat is there missing and in the jejunum the longitudinal muscle coat is often divaricated. (Piersol's Anatomy.)

These points suggest to me an acquired theory and certainly forcible distension can produce sacculation exactly similar to that obtained clinically. I must admit the possible fallacies of all work done on dead material. I agree with Mr. Mason that sclerosis is not a constant factor. In a case under my care the patient was 30 years of age and showed no signs of arterio-sclerosis. I would favour a neuromuscular cause just as probably diverticulosis of the colon—70 per cent. of which appears in the pelvic, the most contracted region of the colon—will possibly be shown to be the late result of spastic colon. Admittedly a dilated colon never shows diverticula, so diverticula in the dilated small gut (such as duodenal ileus) do not appear.

A congenital theory does not appear fully to explain the origin, but I think the final word has not yet been written upon this very interesting disease. I am, Sir, yours faithfully,

Belfast, Nov. 26th, 1933. IAN FRASER.

PUBLIC MORTUARIES

To the Editor of THE LANCET

SIR,—In THE LANCET of Nov. 18th (p. 1188) you give a description of the model mortuary of Battersea which, erected in 1901, has been brought up to date as new methods and inventions have been proved necessary. The Battersea borough council have read the spirit of the Public Health Act in a manner which might well be copied by others. In the provinces, Sections 141 and 143 of the P.H.A., 1875, have generally been interpreted by negation—the word "may" translated as "wo'n't"—and the pen of a master of rhetorical invective could not adequately describe the deplorable conditions in which the dead are temporarily housed and the provision made for the carrying out of post-mortem examinations. Police surgeons and pathologists welcome the attention you are giving to this disgraceful state of affairs, and hope the publicity will prompt the Ministry of Health to insist on the word "shall" taking the place of "may" in the sections mentioned. The solution of the problem is simple if urban and rural districts would combine to provide mortuary accommodation in the same way as they have done for the provision of isolation hospitals.

I am, Sir, yours faithfully,

Wigan, Nov. 27th, 1933. W. E. COOKE.

ACHOLURIC JAUNDICE

To the Editor of THE LANCET

SIR,—Dr. Hubble rebukes me for classifying the case that I reported in THE LANCET of Nov. 18th as one of acholuric jaundice. He points out quite accurately that, prior to splenectomy, there was no evidence of increased fragility of the red cells and none of familial incidence of jaundice. On the other hand, as I made clear in my report, there *was* increased fragility after splenectomy and the section from the excised spleen was stated by a competent pathologist to show the changes usually associated with acholuric jaundice. In the circumstances it may not be unreasonable in me to hope that Dr. Hubble will, on reflection, forgive me.

I am, Sir, yours faithfully,

A. P. THOMSON.

Edgbaston, Birmingham, Nov. 25th, 1933.

G.P.I. AND CHILDBEARING

To the Editor of THE LANCET

SIR,—I should be extremely grateful if medical men who have come across persons of either sex suffering from general paralysis of the insane, who in the course of their disease have had a child, would kindly communicate with me.

I am, Sir, yours faithfully,

G. W. T. H. FLEMING,

Hon. Sec., Clinical Psychiatry Subcommittee, Royal Medico-Psychological Association.

Hereford Mental Hospital, Burghill, Hereford,
Nov. 24th, 1933.

OBITUARY

THOMAS HERBERT BICKERTON, F.R.C.S. Eng., Hon. Ch.M. Liverp.

SENIOR OPHTHALMIC SURGEON TO THE ROYAL INFIRMARY, LIVERPOOL

WE regret to announce the death of Mr. Thomas Bickerton which occurred at his residence in Rodney-street, Liverpool, on Nov. 23rd. The best-known ophthalmic surgeon on Merseyside, his reputation extended far beyond his native city.

Thomas Herbert Bickerton was born in 1857 at Mount Pleasant, Liverpool. His father, a naval reserve surgeon, practised in Liverpool as a nose, throat, and eye specialist, leaning to ophthalmology. The son was left an orphan at the age of 15, his mother having died when she was very young, while his father was killed in a carriage accident at the age of 45. He received his preliminary education at the Liverpool Institute, from whence he went to study medicine at the Liverpool Royal Infirmary. He qualified as M.R.C.S. Eng. in 1879, taking afterwards the diploma of L.R.C.P. Edin., and served both as house surgeon and house physician at the Liverpool Royal Infirmary. Deciding to follow the career of an ophthalmological surgeon he obtained the post of assistant at Moorfields, and later was ophthalmological assistant at Great Ormond-street Children's Hospital. He then carried on post-graduate studies in the subject at Vienna, and after holding various ophthalmological appointments at the Southport General Infirmary, the Bootle Borough Hospital, and the Liverpool Eye and Ear Infirmary, he was elected to the staff of the Liverpool Royal Infirmary as ophthalmic surgeon.

MR. BICKERTON

[*Photograph by Ash*

These were the early days of specialisation, at any rate in the North of England, and Bickerton was one of the first practitioners in the provinces to dissociate the practice of ophthalmology from that of other branches of surgery. He commenced in Liverpool in the early eighties as being first assistant and then partner to Shadford Walker, senior surgeon to the Eye and Ear Infirmary. But Walker died soon after, when Bickerton determined to practise as a pure eye specialist. He came almost at once to the front among his colleagues by the publication of data resulting from his investigations into colour blindness in its relation with shipping disasters. On this subject he made over 40 years ago an important communication to the proceedings of the annual meeting of the B.M.A. held in Dublin in 1887. He criticised the existing attitude of the Board of Trade towards colour blindness in the mercantile marine, and pointed out that over 4000 colour-blind men were in all probability acting as sailors, and that while the danger incurred by their employment was great the means taken to guard against it were trivial. A personal investigation made in Liverpool showed that shipowners were aware of the position and certain of them examined their own men regardless of the Board of Trade certificate. Mr. Bickerton's communication was strongly endorsed by Argyll Robertson and Nettleship, and from that time he became a recognised authority on the subject. He returned to the pursuit five years later at a meeting of the British Medical Association held in Nottingham, and continued to condemn the apathy of the Board of Trade, and Bickerton's close friendship with that great editor, Sir Edward Russell, of the *Liverpool Daily Post*, helped to secure Parliamentary approval for improved colour-blind testing.

As years passed the range of his activities became almost indefinitely extended. His honorary professional work embraced consulting surgeon to the Royal Infirmary, the Northern Hospital, the General Infirmary, Southport, the Bootle Borough Hospital, and the Catholic Blind Asylum. He was amongst that galaxy of prominent men who worked for the foundation of the Liverpool University, and was lecturer in ophthalmology from 1917 to 1923. He was conspicuous in his rôle of local historian, and was president of the Liverpool Medical Institution in 1908–09, and the growth and vitality of that body was his constant interest. He became a city magistrate, in 1926 was elected a Fellow of the Royal College of Surgeons, and was vice-president of the Ophthalmological Society of the United Kingdom.

Dr. Alston Hughes writes: "I take it that sincerity enhances the effect of an appreciation of his character. Bickerton in his personal dealings was a kindly genius, but in a cause he was a zealot. At times immoderate in pressing his views on extraneous affairs, in the practice of his specialty he was paradoxically and consistently temperate. Needless to say he exhibited great skill as an operator; his technique was simple and at the same time superb. Many a time according to the risks and laws of the art, he should not have succeeded, but, somehow or other, he invariably did; indeed the magnetic gift of attaining that elusive quality, success, seemed inborn. The standard he set himself and often voiced to students was 'If this were my eye, should I like this operation or treatment carried out?' I do not remember an instance where he flouted this self-imposed rule. He seemed to know everything that mattered in the clinical aspect of his craft. It is equally true to say that he did not dwell overmuch on academic points. The mastery and gentle care of the individual patient coupled with clinical wisdom and operative skill were the aim and glory of T. H. Bickerton."

Bickerton's family connexions with medicine were very close. As has been said, his father was an ophthalmic surgeon. One sister married Mr. L. Webster Fox, of Philadelphia, who became a leading American eye specialist. Another sister married the late Prof. Rushton Parker. A half-brother is Col. Reginald Bickerton, D.S.O., ophthalmic surgeon to St. Dunstan's, and the Seamen's Hospital, Greenwich. His eldest son, Mr. H. Richard Bickerton, is carrying on his father's practice in Liverpool. His youngest son, Mr. J. Myles Bickerton, is senior ophthalmic surgeon at King's College Hospital, London, and surgeon and dean of the Royal Eye Hospital.

Bickerton in his early days was a keen horseman and a fine shot all his life. For many years his country house was Denhall, in Cheshire, the house described in that once popular sensational novel "The House on the Marsh."

GRACE H. GIFFEN DUNDAS, F.R.C.S.I., D.P.H. Camb.

WE regret to record the death of Dr. Grace Dundas, medical officer for maternity and child welfare to the county borough of Middlesbrough, which occurred on Nov. 6th. Dr. Dundas, who was a native of Kelso, in Scotland, came to Middlesbrough in 1920, and had previously acted as medical officer to the M. and C.W. scheme at Leith, and as deputy medical officer of health at Ilford. The high standard of the Middlesbrough scheme was due to her untiring efforts in the cause of maternal and child welfare, and her kindly disposition and motherly care was universally esteemed by all the mothers and children with whom she came into contact. She had many original ideas, one of the latest of which was classes for fathers, the idea of fathercraft being that husbands should coöperate with their wives in the care of the health of their children.

MEDICAL NEWS

University of Oxford

Lord Irwin will be installed as chancellor of the University at 3 P.M. on Dec. 7th in the Sheldonian Theatre.

On Nov. 18th the degree of doctor of medicine was conferred on T. H. Sellors and A. H. Gale.

University of Cambridge

Dr. A. E. Platt of Sydney has been elected to the Gwynaeth Pretty studentship for the encouragement of research in the ætiology, pathology, or treatment of disease.

University of London

Among those who received the honorary degree of D.Sc. on Nov. 24th, in celebration of founders' day, was Sir Thomas Barlow, F.R.S., consulting physician to University College Hospital.

At a meeting of the senate on Nov. 22nd Dr. R. W. Scarff was appointed, as from Oct. 1st, 1933, to the university readership in morbid anatomy and histology tenable at Middlesex Hospital medical school. Since 1931 Dr. Scarff has been acting as senior pathological assistant in the Bland-Sutton institute of pathology at that school.

The title of emeritus professor of psychology in the university was conferred on Miss Beatrice Edgell, D.Litt., Ph.D., on her retirement from the professorship of psychology at Bedford College.

Epsom College Royal Medical Foundation

At the meeting of the conjoint committee, held in November, pensions of £40 a year were awarded to Mrs. Annie A. Powell, Mrs. Lydia M. Braidwood, and Dr. William Henry Walker. Robert G. McKendrick was awarded a foundation scholarship. Since the annual general meeting, held in June last, the council of the College has awarded pensions of £40 a year to Mrs. Mary Sinclair and Mrs. Eunice C. Nelson, and extra pensions of £20 a year each to Dr. Herbert Blott and Mrs. Emily Hine, and an extra annuity of £8 a year to Miss Albina L. Bull.

The council of the College will shortly award a France pension of £30 a year to a duly qualified medical man of not less than 55 years of age. If the candidate is a single man or a widower, his income, independent of any allowance from the College or from the Royal Medical Benevolent Fund, must not exceed £100 per annum. Forms of application may be obtained from the secretary of the College, 49, Bedford-square, London, W.C.1, and must be returned to him not later than Dec. 31st.

British Institute of Philosophy

An address entitled Plato and Aristotle in Relation to Modern Thought will be given by Prof. W. D. Ross at University College, Gower-street, London, W.C., at 8.15 P.M., on Tuesday, Dec. 12th. Cards of admission can be obtained from the director of studies at University Hall, 14, Gordon-square, W.C.1.

Royal College of Surgeons of England

The annual meeting of Fellows and Members was held at the college on Nov. 16th. The attendance was somewhat meagre, and it was only after a wait of a quarter of an hour that the required quorum of 30 Fellows and members, exclusive of members of the council, was obtained. The president placed before the meeting the report of the council for the year ending July 31st, 1933. He referred to some of the subjects dealt with in the report, and among other things mentioned that the revision of the medical curriculum was now under consideration, and that Sir Buckston Browne had completed his gift of £100,000 for the research farm at Downe. In reply to a suggestion by Dr. Redmond Roche that a general practitioner should be appointed to the committee considering the revision of the medical curriculum, the president explained that the committee was composed of representatives from the universities of Oxford, Cambridge, and London, the two Royal Colleges, and the Society of Apothecaries, and that it was not practicable at this stage to add to the committee, which had already held several meetings and was expected shortly to be in a position to report. He thought the committee was representative of all the interests concerned. Dr. Howard Stratford, with reference to the revision of the medical curriculum, suggested that it might be desirable to add a course of instruction in first aid.

Reference having been made to the retirement of Sir Arthur Keith, the president undertook to express to him, on behalf of those present, their appreciation of the distinction and ability with which he had carried out the duties of conservator of the museum during the past 25 years.

The following resolution was then moved by Mr. Vaughan Pendred, F.R.C.S., seconded by Dr. Stratford, and carried by 24 votes to 2: "That this forty-fourth annual meeting of Fellows and Members of the Royal College of Surgeons of England reaffirms that members, who constitute ninety per cent. of the college, should have some representation on the council, a similar resolution having been passed 43 times and never once lost."

Royal Sanitary Institute

Prof. W. W. Jameson will take the chair at a sessional meeting to be held at this institute, 90, Buckingham Palace-road, London, S.W.1, at 5.15 P.M., on Dec. 12th. A discussion on practical and scientific problems of the milk-supply and their laboratory control will be opened by Mr. Ben Davies, director of Messrs. United Dairies, Ltd.

Royal Northern Hospital

At the recent dinner in aid of the funds of this hospital £5885 was contributed. This sum has enabled the institution to claim a grant of £5000 from King Edward's Fund, which was made contingent upon raising £5000 in donations by the end of the year.

Society of Medical Officers of Health : Annual Dinner

Princess Louise was to have been a guest of honour at the dinner at the May Fair Hotel on Nov. 23rd, when Dr. Charles Porter presided. It would have been her first appearance at a public banquet, and, although not allowed to undertake any official engagements, she wrote to congratulate the Society on its work, laying stress in her letter on the power of teachers to endue the parents of children with the need of true hygiene. Sir Hilton Young, in proposing "The Society," remarked that it was the clearing-house of ideas in preventive medicine, and expressed special gratitude for the pioneer work of its central council in health education. He commended the disused hoardings of the Empire Marketing Board for advertising health. The national campaign against slums was, he said, more than any personal fad of a minister or government. It was the demand of the nation, and he looked to medical officers of health as a spearhead in the attack which would need the best energies of local authorities to accomplish; for they were embarking on a programme for clearing 200,000 houses in five years, an effort 70 per cent. greater than that proposed by local authorities when the Act of 1930 was passed. The country, he said, must concentrate on the business of getting rid of the gross evil of undoubted slums, houses that were unfit for human habitation and could not be made fit at a reasonable cost. Dr. Porter, in response, expressed his sincere happiness that we had a Minister of Health who was really going to see that the slums were cleared; he was not quite sure that the Minister had realised what the medical officer of health had had to go through in his effort to better the housing of the people. Dr. James Fenton, president of the metropolitan branch of the Society, proposing "The Guests," congratulated the Minister on his energy and courage in launching a scheme of slum clearance drive; he assured him it would not be the fault of medical officers if the scheme was not a success. Sir Holburt Waring, replying, emphasised the need for health training in the schools in order that the standard of living should be kept up in the new houses. Alderman James Fettes, Mayor of St. Marylebone, regretted that the medical officer's name was not better known in the area of which he had sanitary charge; the man in the street knew his name, if at all, as attached to appeals for rat week or to prevent the soiling of pavements by dogs. Miss E. M. Musson, chairman of the General Nursing Council, who also replied, took the opportunity of appealing to medical officers to employ a larger percentage of trained nurses in the new council hospitals, if only for the reason that the market was now getting overstocked with nurses, especially since the demand from the Dominions and the U.S.A. had stopped. She asked public health committees to ensure to nurses an all-round training, and she thanked the borough which was at present allowing a nurse to get her fever certificate concurrently with her general training. Probationary nurses, she remarked, were now not overworked; it was the matrons who were overworked from having so large an untrained staff to supervise. Captain G. S. Elliston, M.P., proposed "The Chairman" on an acquaintance of 25 years' standing, which started in Leeds with the daily production of a public health journal. The dinner was enlivened by Mr. Lionel King with incredible card tricks, including the dictating how a nap hand should be played at the high table by the President, Mrs. Porter, and Lady Young, when he could not possibly have seen the cards except by collusion with the Minister of Health.

St. Bartholomew's Hospital

On Friday, Dec. 8th, at 3.45 P.M., the Prince of Wales, as president of this hospital, will visit the new medical college in Charterhouse-square in order to inspect the site and the buildings.

Society of Medical Officers of Health

The fever hospital medical services group of this society will hold a meeting at 4.30 P.M. to-day, Friday, Dec. 1st, at 1, Upper Montague-street, London, W.C. Dr. H. S. Banks will deliver a presidential address on the use and misuse of antitoxin.

Fellowship of Medicine and Post-Graduate Medical Association

A debate will be held on Thursday, Dec. 7th, at 8.30 P.M., at the lecture hall of the Royal Society of Tropical Medicine and Hygiene, Manson House, 26, Portland-place, London, W., when the motion will be that operations for the removal of tonsils are too often performed without adequate cause. Sir StClair Thomson will be in the chair. Mr. Herbert Tilley and Dr. J. Alison Glover will propose the motion, and Dr. Dan McKenzie and Mr. Archer Ryland will oppose it. All members of the medical profession are invited to be present. During 1934, on the second Saturday in each month, a lecture-demonstration will be given at 3 P.M. at the National Temperance Hospital, Hampstead-road, London, N.W., and on every Tuesday from 2.30 to 4 P.M. a lecture-demonstration will be given at the Medical Society of London, 11, Chandos-street, W.1. Further particulars may be had from the secretary of the Fellowship, 1, Wimpole-street, W.1.

Radiological Congresses

The annual congress arranged by the British Institute of Radiology, incorporated with the Röntgen Society, will be held at the Central Hall, Westminster, from Dec. 6th to 8th, under the presidency of Dr. Stanley Melville. The programme is summarised in our Medical Diary. In connexion with the congress there will be an exhibition demonstrating recent advances made in radiological apparatus. The address of the Institute is 32, Welbeck-street, London, W.1. The annual dinner will take place on Friday the 8th, at 7.30 for 7.45 P.M.

The fourth International Congress of Radiology will be held in Zurich from July 24th–31st, 1934. At the opening meeting Prof. Gösta Forssell (Stockholm) will speak on the organisation of cancer campaigns in general, and representatives will report on the measures adopted in their own countries. The subjects to be discussed at the general meetings include X ray diagnosis of bone tumours, pulmonary tuberculosis as seen radiologically, radiation treatment of cancer of the uterus and of the mouth and pharynx, radiation genetics, and mitogenetic radiation. The secretary of the congress is Dr. H. E. Walther, Gloriastrasse 14, Zurich.

University of Durham College of Medicine

Thirty-seven governors of the College have written to the local press to express whole-hearted endorsement of the resolution passed by the City Council of Newcastle-on-Tyne. This motion, which was passed by 55 votes to 1, requested Lord Londonderry to take steps to secure an impartial examination of the constitution and statutes of Durham University and its constituent colleges. The letter of the 37 governors points out that the presence of only one member, other than the nominees of the present administration, on the committee appointed to consider Sir Amherst Selby-Bigge's recommendations, makes impossible the task of reform from within the College. The letter is signed by the Lord Mayor and the Sheriff of Newcastle, the Mayor of Gateshead, the Deputy Mayor of Durham, the chairman of Newcastle Education Committee, and the following members of the medical profession who are also on the governing body: Dr. J. A. Charles (medical officer of health for Newcastle), Dr. S. W. Davidson (hon. physician to the electrical department of the Royal Infirmary), emeritus Prof. Robert Howden, Dr. Charles Irwin (hon. surgeon to the Tynemouth Jubilee Infirmary), Dr. G. C. M. M'Gonigle (medical officer of health for Stockton-on-Tees), emeritus Prof. Rutherford Morison, and Mr. W. E. Wardill (assistant surgeon to the Royal Infirmary).

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Indian Joint Select Committee

A MOTION reappointing the Joint Select Committee on Indian Constitutional Reform was agreed to in the House of Commons on Wednesday, Nov. 22nd. A similar motion was agreed to in the House of Lords on Thursday the 23rd.

Treatment of Road Accident Cases

In the House of Lords on Nov. 28th Lord MOYNIHAN presented a Bill to make provision for the payment of remuneration to registered medical practitioners and hospitals for treatment rendered to persons injured through the use of vehicles on the roads.

The Bill was read a first time.

Rural Water-supply and Slum Clearance

On Nov. 27th, on the debate on the address, Mr. HICKS, speaking for the Labour opposition, said that during 150 years working people in this country had never been properly housed. Over 50 per cent. of the houses in Great Britain to-day have only two bedrooms. It was not an exaggeration, therefore, to say that every other house ought to be pulled down. When millions of people had to be content to live under such abominable conditions he said that starting off with 12,000 houses and under public pressure getting the number up to 44,000 was still, and would be, a very small effort.

Sir H. SAMUEL said a very large proportion of the population were actually underfed. The British Medical Association showed that a really wholesome dietary even at the minimum would contain more articles of food and in larger quantities than a considerable proportion of our people in the present distressful circumstances were able to purchase. It was certain, for example, that numbers of children in the poorer quarters of our towns were almost starved of milk. It was wrong therefore to assume that consumption was fixed and that they must cut down supply in order to fit a shrinking demand. The whole object of the national policy should be for a large demand in order to absorb an increased supply.

After further debate Sir HILTON YOUNG, Minister of Health, said that he noticed with much pleasure that there had been no attack on the public health services. There was no purpose upon which money could be better spent. He sent a circular in May to county and rural district councils urging them to utilise their powers under the Local Government Act of making contributions to the cost of rural water schemes. An increasing number of local authorities were making use of those powers but nevertheless the Government had decided that sufficient use was not being made of them and the Chancellor of the Exchequer had agreed to put at his disposal for this purpose £1,000,000 which would be used to make grants towards the capital cost of water schemes in rural areas prepared and initiated within the next few years. He would shortly introduce a Bill to deal with this matter. It was essential that local authorities and consumers of water should bear their fair proportion of the cost. Where after such contributions had been allowed for, the water schemes could not be promoted because of the prospect of a heavy charge on the parish rate the Exchequer grant would be used to mitigate the local burden.

Dealing with the question of slum clearance Sir Hilton Young said that there were 1717 local authorities, the greater number of them county districts not so particularly concerned with slum questions as others. Of these 1717 authorities all but 45 had now either submitted to him their programmes or satisfied him that they were taking action and their programmes were coming along. There were 45 laggards, all of them, he thought, in country districts. As to the latter the sands were running out and they must have a time limit, and within that time limit if the programmes were not submitted they must proceed to inquiry under the Act of 1930 which was the first step to putting into force his authority as Minister of Health to secure that the authorities did take action. There was a small class of local authorities whose programmes were inadequate. Negotiations with them were being actively continued, and there again he could not allow an indefinite extension of time for these negotiations. The Government were entitled to expect that all local authorities should follow the example of the best and that they should all start down the course together, and it was their business to secure that by the application of such a time limit there was such a general start. Programmes of the slum clearance of some 200,000 houses and more had been submitted. They were now assured of that figure of 200,000. Was that figure enough or was it not? They were dealing with houses unfit for habitation and which had to be cleared away without compensation to the owner; a specific class of house susceptible in the judgment of practical men to a clear definition. Other estimates had been put forward for a much larger figure—4,000,000, 1,500,000, and 1,000,000. They could only arrive at figures of that sort by taking a quite different class of house which was capable of improvement, which was capable of reconditioning, and if they put those in, they might get 1,000,000 houses. But if this slum campaign was to be a success they must concentrate in the first place upon the clearance of that class of house unfit for habitation and for which the owner might expect no compensation. Therefore the figure of 200,000 was the result of the considered judgment of the local authorities who had the greatest knowledge on the subject.

In order to give a complete account of the policy of the Government in respect of the slum clearance campaign, he must deal with reconditioning. In the King's Speech reference was made to the work of reconditioning and the approaching legislation on the subject. But he agreed that they would be wasting their efforts and the slum campaign would die away in London if they looked upon the reconditioning of houses as a substitute for clearance. They had dealt with the clearance problem first in order that it should be clearly defined before they got on to the second stage of reconditioning. It would be a matter of infinite regret if needlessly this question of a national effort against the slums were to become overmuch embroiled in party controversy. Criticism was welcome, criticism acknowledging a common end, and designed to promote and increase that end.

HOUSE OF COMMONS

THURSDAY, NOV. 23RD

Celluloid Toys and Risks of Fire

Mr. SUTCLIFFE asked the Home Secretary if his attention had been drawn to the risks to children from fire due to the use of cheap celluloid toys; and whether he had any record of fatal accidents or serious damage to property due to such toys.—Sir JOHN GILMOUR replied: In 1923 the Royal Commission on Fire Brigades and Fire Prevention drew attention to this danger in their report, but did not give particulars of any accidents due to celluloid toys. Since then accidents from the use of such toys have occasionally come to the notice of the Home Office, including one case where there was a fatality and serious damage to property, and two other fatal cases.

Omnibus Conductors and First Aid

Mr. BOSSOM asked the Minister of Transport, in view of the number of road accidents in which omnibuses were involved, whether he would require the conductors of all long-distance omnibuses to be trained in first aid and also require all such omnibuses to carry a box containing first-aid equipment.—Lieut.-Col. HEADLAM replied: A large proportion of long-distance public service vehicles are express carriages or contract carriages, and such vehicles are required under the existing regulations to carry first-aid outfits. My hon. friend, the Minister of Transport, does not think that he would be justified in adopting my hon. friend's proposal that a training in first aid should be made a condition of employment of either drivers or conductors, but he will consider whether the desirability of a knowledge of first aid could be usefully brought to the notice of those concerned.

Census and Creation of Families

Sir GEORGE HAMILTON asked the Minister of Health how far the under-estimate of the true number of families in England and Wales in the Census of 1921, amounting to 400,000, as given in the last annual report of the Ministry of Health, was likely to have been repeated in the 1931 Census.—Sir HILTON YOUNG replied: The figures indicate that the checks believed to have been imposed by the housing shortage upon the normal creation of new families up to 1921 has been substantially removed by the date of the 1931 Census.

MONDAY, NOV. 27TH

Opium Traffic in Far East

Mr. RHYS DAVIES asked the Secretary of State for Foreign Affairs if he was aware that opium was being transported from Persia to Manchuria largely in British ships, and that the authorities in British ports and dependencies on the road between Persia and Manchuria facilitated this trade; whether he would cause a protest to be lodged with the Opium Advisory Committee of the League of Nations and take other steps through the machinery of the League; and whether he would give an assurance that no facilities would in future be given for any sort of traffic in dangerous drugs in any of the British ports or dependencies concerned.—Sir J. SIMON replied: As far as can be ascertained the suggestion made in the first part of the question is unfounded. I may add that the question of the application to Manchuria and Jehol of the provisions of the International Conventions relating to opium and dangerous drugs was considered earlier in the year by the Sino-Japanese Committee of the Assembly of the League of Nations and a recommendation to Governments was adopted. The position generally in Manchuria and Jehol with regard to opium and dangerous drugs was further considered by the Opium Advisory Committee of the League at its recent meeting, and I am informed that the Committee has recommended to the Council that Governments should be asked to scrutinise with special care any applications for export to this territory. The hon. Member may rest assured that the action of the authorities in this country and in all British dependencies will continue to be strictly in accordance with our international obligations and the League recommendations.

The following is the text of the League Advisory Committee's recommendations:—

VII.—With reference to the Geneva Opium Convention of 1925, Chapter V., the Committee recommends to members of the League and to interested States non-members that applications for the export to "Manchukuo" territory of opium or other dangerous drugs should not be granted unless the applicant produces an import certificate in accordance with the Convention of such a nature as to satisfy the Government to which application is made that the goods in question are not to be imported into "Manchukuo" territory for a purpose which is contrary to the Convention. A copy of the export authorisation should accompany the consignment, but Governments should refrain from forwarding a second copy of the export authorisation to "Manchukuo," since such action might be interpreted as a *de facto* recognition of "Manchukuo."

Rats in House of Commons

Mr. MCENTEE asked the First Commissioner of Works, with regard to the recent discovery of a number of black rats in various parts of the House of Commons building, what numbers had been killed; whether the species found was known to be a dangerous disease carrier; and what steps he was taking in the matter.—Mr. W. ORMSBY-GORE replied: I am not aware that any black rats have been seen in the Palace of Westminster, and none have been killed. Three brown rats were caught in October, and, though the number of traps was increased from 32 to 100 during the present month, only three more have been caught, all of the same variety. Though all rats are objectionable, I do not understand that the brown rat is specially dangerous as a carrier of disease.

Importation of Drug Materials

Sir WILFRID SUGDEN asked the President of the Board of Trade if he would consider the method and manner of administration of the regulations governing the Additional Import Duties (No. 5) Order, 1932, as they were causing hardship to traders, especially in regard to crude drugs in the form of leaves dried and pressed into bales; and if he would reconsider the position as to the cutting of such leaves, in order to avoid throwing English labourers out of employment.

Mr. TOM SMITH asked the Secretary to the Treasury whether he was aware of the complaints regarding the administration of the Additional Import Duties (No. 5) Order, 1932, with respect to foliage, covering leaves dried and pressed into bales for manufacture into drugs; that if the leaves were cut up they were subject only to the ordinary 10 per cent. duty instead of the duty of 2*d.* per pound, and that the cutting of these leaves has hitherto provided employment in this country; and would he have inquiries made into the administration of the order with a view to enabling traders to determine the cost of their goods in advance.—Mr. HORE-BELISHA (Financial Secretary to the Treasury) replied: I am advised that the dried leaves referred to come within the scope of the duty imposed on foliage by the Additional Import Duties (No. 5) Order, 1932; but that such leaves if imported already cut up or ground do not come within the charge. The question of any alteration of the scope of the existing duty is a matter for consideration in the first place by the Import Duties Advisory Committee, with whom I understand the interests concerned have already communicated.

Grants to Local Authorities

Mr. THORNE asked the Chancellor of the Exchequer whether he was in a position to state the result of the negotiations with representatives of local authorities in connexion with the contributions of such bodies; whether any reduction of the 60 per cent. contribution towards maintenance of able-bodied unemployed had been agreed upon; and whether he intended to continue the grant of £500,000 to distressed areas in this connexion.—Mr. HORE-BELISHA replied: As regards the first two parts of the question I must ask the hon. Member to refer to the Bill which has now been circulated. As regards the last part of the question the special grant to which the hon. Member refers will not be continued as such, since it was an emergency grant given in anticipation of the more comprehensive relief now proposed to be given under the permanent scheme.

Indian Officers' Pensions

Sir WILLIAM DAVISON asked the Secretary of State for India whether, in view of the fact that officers of the various Indian services now found it impossible to effect insurances on their pensions, or prospects of pension, he would make a further statement to reassure these officers.

Sir A. M. SAMUEL asked the Secretary of State for India if he was now in a position to make any further statement for the reassurance of those officers of the Indian services who had recently been unable to insure their pensions with the various insurance companies.—Sir S. HOARE replied: I have high authority for saying that Lloyd's and the insurance companies generally do not regard the payment of pensions as a suitable subject for insurance. There is no basis upon which the risk, if there is a risk, can be actuarially assessed. The fact that there is no limit of time cuts across the principle that for all forms of insurance except life insurance there should be a time limit. The principle of average also does not apply, as claims would be either universal or nil. If, therefore, Indian pensions are not insurable, it is, according to information which I have obtained from reliable sources, for exclusively technical reasons which apply generally to all business of this kind and not because of any particular anxiety about the future constitution of India.

National Health Insurance Arrears

Miss WARD asked the Minister of Health if he was aware that the absence of regulations dealing with the extension of the period for the payment of arrears under the National Health Insurance Act, 1932, until March 31st, 1934, was causing hardship; and if he would make such regulations as soon as possible.—Sir HILTON YOUNG replied: An explanatory circular relating to the matter referred to by my hon. friend has been prepared and is being sent to all approved societies. The necessary regulations will also be issued within a few days.

Death Certificates

Mr. HALL CAINE asked the Minister of Health whether his attention had been called to a recent case where a death certificate was issued while the individual concerned was still alive; and whether, in view of the fact that it was legal at the present time for a doctor to issue a certificate without viewing the body if he had visited the person within fourteen days previous to the reported death, he would consider introducing amending legislation to deal with the matter.—Sir HILTON YOUNG replied: I am aware of the case referred to. The question of provision for the medical verification of the fact of death was very fully discussed during the passage of the Births and Deaths Registration Act, 1926, and I am not prepared in the present circumstances to introduce further legislation.

TUESDAY, NOV. 28TH

Scottish Housing Report

Mr. GUY asked the Secretary of State for Scotland when the Report of the Scottish Housing Committee was likely to be published.—Mr. SKELTON replied: I am informed that the Report is in an advanced stage of preparation, but I cannot yet say when it will be received. It will be published with all expedition.

Patients Expelled by Panel Doctor

Mr. McGOVERN asked the Secretary of State for Scotland if he would inquire into the case of Mr. D. R. McClure, 12, Hawthorn-quadrant, Glasgow, who had been expelled, together with his brother, from the panel of his panel doctor, on the ground of certain actions and statements made by their father while acting as a political agent during the recent by-election at Kilmarnock.—Mr. SKELTON replied: An insurance practitioner is entitled, without stating reasons, to give notice at any time to the insurance committee for the area that he desires particular insured persons to be removed from his list and the committee must take the necessary steps to enable such persons to choose another doctor. I am informed that this procedure was followed in the cases referred to by the hon. Member. In these circumstances my right hon friend has no power to intervene and he therefore considers that there is no point on which inquiry would serve a useful purpose.

Tuberculosis in Gwyrfai Rural District

Major OWEN asked the Minister of Health, whether his attention had been drawn to the prevalence of tuberculosis in the Gwyrfai rural district area; and what steps were being taken to deal with this scourge.—Mr. SHAKESPEARE (Parliamentary Secretary to the Ministry of Health) replied: Yes, Sir. My right hon. friend has received copies of the recent report made by a medical officer of the Welsh National Memorial Association on the subject of the incidence of tuberculosis in this district and certain other parts of North Wales. My right hon. friend understands that a conference of representatives of the Association and of local authorities concerned was held on Nov. 11th, when it resolved that the county councils represented at the conference should be requested to give immediate consideration to the report, and the Association undertook to carry out a number of preventive and educational measures.

Medical and Scientific Research for Services

Mr. MANDER asked the Lord President of the Council the amount of money spent, and the proportion of time devoted, by the department of Scientific and Industrial Research and the Medical Research Council, during the past three years, to work for the Army, Navy, and Air Force.—Mr. BALDWIN replied: The cost of investigations carried out by the Department of Scientific and Industrial Research for the War Office, the Admiralty, and the Air Ministry is recovered from these Departments respectively, as is shown by the estimates of the Department of Scientific and Industrial Research. The cost of such work in each of the last three financial years was as follows:—

Year ending March 31st.	Cost of work for Defence Departments (recovered from them).
1931	£38,734
1932	£39,174
1933	£39,793

Approximately 80 per cent. of these amounts was recovered from the Air Ministry in respect of the work of the Aerodynamics Department of the National Physical Laboratory, which is directed mainly to the study of the science of aviation generally and the results of which are applicable to both Civil and Military aviation. The proportion of the time of the staff of the department devoted to such work in each year is approximately 7 per cent. No expenditure has been incurred by the Medical Research Council exclusively for the purposes of the Admiralty, War Office, or Air Ministry. Such occasional investigations as have been undertaken at the suggestion of those Departments have been of wider interest and the results are available for general use.

Vacancies

For further information refer to the advertisement columns

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

Birkenhead General Hospital.—Hon. Asst. Surgeon.

Blackburn Royal Infirmary.—Third H.S. £175.

Brighton, Royal Sussex County Hospital.—Cas. H.S. £120.

Cambridge, Addenbrooke's Hospital.—Res. Anæsthetist and Emergency Officer. At rate of £130.

Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.

Central London Ophthalmic Hospital, Judd-street, W.C.—Jun. H.S. £100.

Central London Throat, Nose and Ear Hospital, Gray's Inn-road, W.C.—Hon. First Assistant for Out-Patient Dept.

Chester Royal Infirmary.—H.S. £150.

Cobham, Surrey, Schiff Home of Recovery.—Res. Surg. O. £200.

Colchester, Essex County Hospital.—Asst. H.S. £120.

Colchester, Royal Eastern Counties' Institution.—Med. Supt. for Bridge Home, Witham. £550.

Connaught Hospital, Walthamstow, E.—Res. Cas. O. At rate of £100.

Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. At rate of £110.

Durham University and College of Medicine, Public Health Laboratory.—Whole-time Asst. £350.

Erith and District Hospital.—Hon. Consulting Jun. Asst. S., Ophth. S., Orthopædic S., and Surg., Ear, Nose and Throat Dept.

Exeter, Royal Devon and Exeter Hospital.—H.P. and H.S. to Spec. Depts. Each at rate of £150.

Fulham Hospital, St. Dunstan's-road, Hammersmith, W.—Clin. Asst. £100.

Glasgow, Victoria Infirmary.—Whole-time Asst. Radiologist. £550.

Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—H.S. At rate of £100.

Hertford County Hospital.—H.P. At rate of £150. Also Hon. Radiologist.

Hospital for Consumption and Diseases of the Heart, Brompton, S.W.—Res. M.O. £350.

Hospital for Sick Children, Great Ormond-street, W.C.—H.P. and H.S. Each at rate of £100.

Hospital for Women, Soho-square, W.—Res. M.O. At rate of £100.

Hull Municipal Maternity Home and Infants' Hospital.—Jun. Res. M.O. £100.

Leamington Spa, Warneford General Hospital.—Hon. Radiologist.

Lincoln County Hospital.—Sen. H.S. At rate of £250.

Liverpool, Alder Hey Children's Hospital.—Res. Asst. M.O. £200.

London Hospital, E.—Medical First Asst. and Reg. £300.

London Jewish Hospital, Stepney Green, E.—Surg. Reg. 60 gns.

Manchester Ear Hospital, Grosvenor-square, All Saints'.—Res. H.S. £120.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Radium Officer. £700.

Northwood, Middx., Mount Vernon Hospital.—Asst. Clin. Pathologist. £500.

Norwich, Norfolk and Norwich Hospital.—H.S., H.S. to Special Depts. Each £120. Also H.P. £120.

Plymouth, Central Hospital.—H.S. At rate of £150.

Plymouth, South Devon and East Cornwall Hospital.—H.P. and H.S. Each at rate of £120.

Preston, Biddulph Grange Orthopædic Hospital.—Jun. H.S. At rate of £150.

Princess Beatrice Hospital, Richmond-road, Earl's Court, S.W.—Res. M.O. At rate of £110.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—Res. M.O. £200. Also H.S. At rate of £125. Asst. Physician. £40.

Princess Louise Kensington Hospital for Children, St. Quintin-avenue, W.—H.P. and H.S. Each at rate of £100.

e Hospital.—H.S. £150.

Holloway, N.—H.S. At rate of £70.

Hospital, City-road, E.C.—Out-patient

ht County Hospital.—Res. H.S. £180.

r Cancer, &c., City-road, E.C.—Clin. Assts. for Out-patients' Dept.

St. Olave's Hospital, Lower-road, Rotherhithe, S.E.—H.P. £80.

St. Peter's Hospital, Whitechapel.—Res. Med. Supt. £1000.

St. Peter's Hospital for Stone, &c., Henrietta-street, W.C.—Clinical Assts.

Salford Royal Hospital.—Res. Surg. O. £200. Also two H.S.'s. Each at rate of £125.

Sheffield, Jessop Hospital for Women.—H.S. for Maternity Dept. At rate of £120. Also two H.S.'s. Each at rate of £100.

Southampton, Royal South Hants and Southampton Hospital.—H.P., Two H.S.'s, Cas. O., and Res. Anæsthetist. Each at rate of £150.

South-Eastern Hospital for Children, Sydenham, S.E.—Jun. Res. M.O. At rate of £120.

Southend-on-Sea General Hospital.—Second H.S. At rate of £100.

Stockport Infirmary.—Res. Surg. O. £250.

Torquay, Torbay Hospital.—Hon. Phy. and Hon. Surg. to Spec. Depts.

Weir Hospital, Grove-road, Balham, S.W.—Hon. Consultant to Ear, Nose and Throat Dept.

West London Hospital, Hammersmith-road, W.—H.P. and Two H.S.'s. Each at rate of £100.

Wigan, Royal Albert Edward Infirmary and Dispensary.—H.S. At rate of £150.

Willesden General Hospital, Harlesden-road, N.W.—Cas. O. At rate of £100. Also Clin. Assts. for Out-patients' Dept.

Worcester Royal Infirmary.—Sen. H.S. £180.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Saltcoats (Ayr).

The Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's
Lambeth County Court District.
reach the *Private Secretary*, H
London, S.W., not later than Dec. 16th.

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, Dec. 5th.—5.30 P.M., ORTHOPÆDICS. (Cases at 4.30 P.M.) Mr. A. T. Fripp: *Torticollis with Absence of Lateral Mass of Atlas.* 8 P.M., PATHOLOGY. Dorothy S. Russell and Hugh Cairns: Pachymeningitis Interna Hæmorrhagica Associated with
Sarcomatosis of the Dura Mater.
laxis of Cancer. G. M. Findlay an
matosis in Poultry. Honor B.
The Cultivation of Skeletal Tissue. (Cinema demonstration.) J. A. Murray: *Demodex folliculorum* in the Rat.

WEDNESDAY.— cussion
on the itution
in the Li . E. W.
in the

THU DISEASES AND PARASITOLOGY. Discussion on Avitaminosis (B Group) in
Tropica tries. Opening papers
by Dr. R. A. Peters, Dr. Lucy
Wills, a *Members of the Thera*-
peutics Section are specially
invited

FRIDAY.—5 at 4 P.M.) Prof. H. H.
Woollard: *The Anatomy* of the
Suprarenal Gland. Dr. L and
Pathological Aspects of th Cases
will be shown by Dr. Levy ther,
Dr. G. M. Wauchope, and Dr. Maurice A. Cassidy. Specimens will be shown by Dr. F. Graham Lescher and Dr. Robb Smith, Dr. Reginald Lightwood, Dr. R. W. B. Ellis, and others. 5 P.M., OPHTHALMOLOGY. Clinical Meeting at the Western Ophthalmic Hospital, Marylebone-road, N.W. Tea at 4.30 P.M. 8.15 P.M., OBSTETRICS AND GYNÆCOLOGY. Prof. Aschheim: Presence and Effect of Female Sex Hormones and Gonadotropic Substances.

BRITISH INSTITUTE OF RADIOLOGY, at the Central Hall, Westminster, S.W.

WEDNESDAY, Dec. 6th.—2.30 P.M., Official opening of Exhibition by Lord Horder. 5 P.M., Dr. Stanley Melville: Presidential address.

THURSDAY.—10 A.M., Physical and Technical papers. 2.30 P.M., *Prof. Woodburn Morison*: Tumours of Bone. 5 P.M., Dr. N. S. Finzi: Radium Treatment in the Future. (Mackenzie Dav

FRIDAY.—10 A.M., Discussion on
with Special Reference to the
Rays. To be opened by Dr.
Dr. W. M. Levitt, Dr. G. F. Stebbing, and Dr. Russell J.
Reynolds. 2.30 P.M., Mr. A. Bouwers, D.Sc.: Mo
X Ray Developments. (Silvanus Thompson Mem
lecture.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY.

FRIDAY, Dec. 8th.—8.45 P.M. (at the Miller General Hosp
Greenwich), Sir Charles Gordon-Watson: Difficu
and Dangers in Rectal and Colon Surgery.

LECTURES, ADDRESSES, DEMONSTRATIONS, &

ROYAL COLLEGE OF SURGEONS, Pall Mall East, S.

THURSDAY, Dec. 7th.—5 P.M., Mr. L. W. G. Malco
Prehistoric and Primitive Surgery. (Thomas V
lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADU
MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Dec. 4th to SATURDAY, Dec. 9th.—LON
LOCK HOSPITAL, Dean-street, W. Course in Ven
venings.—BRITISH
. Course in Rheumat
M.—INFANTS HOSP
in Diseases of Inf
DISEASES OF THE S
in Dermatology. A
e open only to Mem
owship of Medici
, 26, Portland-place
Thurs., 8.30 P.M., Debate on the motion "that o
tions for the removal of tonsils are too often perfor
without adequate cause." Principal speakers:
Herbert Tilley and Dr. Alison Glover, Dr.
McKenzie and Mr. Archer Ryland. The debate is
to all members of the medical profession.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

TUESDAY, Dec. 5th.—3.15 P.M., Mr. A. L. Punch: Arti
Pneumothorax.

HAMPSTEAD GENERAL AND NORTH-WEST LON
HOSPITAL.

WEDNESDAY, Dec. 6th.—4 P.M., Dr. John Ryle: Mig
and Its Variants.

CENTRAL LONDON THROAT, NOSE, AND
HOSPITAL, Gray's Inn-road, W.C.

MONDAY, Dec. 4th and following TUESDAY, WEDNE
THURSDAY, and FRIDAY.—12.30 P.M., Cours
Methods of Examination and Diagnosis.

FRIDAY.—4 P.M., Mr. C. Gill-Carey: Rhinological As
of Asthma.

HOSPITAL FOR SICK CHILDREN, Great Ormond-s
W.C.

TUESDAY, Dec. 5th.—11.30 A.M., Dr. David Nab
Immunisation Methods Against Scarlet Fever
Measles.

WEDNESDAY.—9.30 A.M., Skin Clinic. 2 P.M., Dental C

THURSDAY.—2 P.M., Tonsils, Adenoids, and Anæst

SATURDAY.—9.30 A.M., Eye Clinic.

Medical and Surgical Out-patient Clinics: daily
Mond. to Sat., 10 A.M. to 12 noon. Medical W
mornings, 10 A.M., Mond., Wed., Thurs., and
afternoons, 2 P.M., Mond., Tues., Thurs., and
Surgical Wards: Tues., Thurs., Frid. mornings,
Wed. afternoon.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

SUNDAY, Dec. 3rd.—10.30 A.M., Dr. C. K. J. Ham
The Premature Infant. 11.45 A.M., Dr. J. E. M. Wi
Fungi on the Human Skin.

KING'S COLLEGE HOSPITAL MEDICAL SCH
Denmark-hill, S.E.

THURSDAY, Dec. 7th.—4.30 P.M., Dr. R. A. McCance:
Rôle of Vitamins in Health. 9 P.M., Mr. H.
Wood: Common Surgical Affections of the To
and Jaws.

ON POST-GRADUATE ASSOCIAT
Ouseley-road, Balham, S.W.
. 6th.—4 P.M., Mr. V. Z. Cope: De
rgical Cases.

ROYAL INSTITUTE OF PUBLIC HEALTH, 23, Q
square, W.C.

WEDNESDAY, Dec. 6th.—4 P.M., Dr. D. M. Od
Citizenship in Relation to Mental Health.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hos
49, Leicester-square, W.C.

TUESDAY, Dec. 5th.—5 P.M., Dr. H. Corsi: Leuk
Cutis. Mycosis Fungoides.

THURSDAY.—5 P.M., Dr. R. T. Brain: Vesicular and B
Eruptions.

CHADWICK PUBLIC LECTURES.

TUESDAY, Dec. 5th.—8 P.M. (at the Institution of Mech
Engineers, Storey's-gate, Westminster), Mr. J
Coste, F.I.C.: Rural Sanitation.

LEEDS GENERAL INFIRMARY.

TUESDAY, Dec. 5th.—4 P.M., Dr. Burrow: Demonstr
of Medical Cases.

MANCHESTER ROYAL INFIRMARY.

TUESDAY, Dec. 5th.—4.15 P.M., Dr. Crighton Bram
D.A.H.

FRIDAY.—4.15 P.M., Mr. H. H. Rayner: Demonstrat
Surgical Cases.

ANCOATS HOSPITAL, Manchester.

THURSDAY, Dec. 7th.—4.15 P.M., Dr. A. Hensha
Modern Pathological Department, with Demonstr

GLASGOW, Post-graduate Lectures.

TUESDAY, Dec. 5th.—3.30 P.M. (in the Faculty
Vincent-street), Mr. A. H. Edwards: Review o
Uses of Physical Treatment.

WEDNESDAY.—4.15 P.M. (at the Victoria Infirm
Dr. Ivy McKenzie: Surgical Cases.

NOTES, COMMENTS, AND ABSTRACTS

BITING SPIDERS

'HE "jockey spider" of Australia, described in issue of Sept. 9th (p. 625), is closely akin to *rodectus mactans*, the "black widow" or "shoe- ton" spider of the United States. Bites from se spiders give rise to alarming symptoms and cause the death of the patient. The lesion is n found on the genitals, for the insects haunt door privies, but Groesbeck Walsh and W. G. rgan [1] remind us that spiders may be encountered other places, and bites may therefore occur on any t of the body. Of their series of 29 patients east 16 were bitten while using an outdoor toilet, the remainder met the spider in houses, fields, ages, and even in bed. One man was bitten ween the toes through a broken shoe while working the fields, one was attacked in a bowling alley, other in a kitchen, and the sites affected in this ies were the hand, foot, leg, knee, and hip, as well the genitals. The symptoms include abdominal idity, pain, and shock, and may be sufficiently ite to favour a diagnosis of ruptured gastric ulcer. e possibility of arachnoidism has to be borne in nd in countries where these spiders are to be nd; but Morgan and Walsh make it clear that the gnosis of spider-bite cannot be set aside simply ause no lesion is found on the genitals. Moreover, patient is sometimes so much collapsed that he is able to give a history of having been bitten, or he y not recall the bite. In such cases rigidity, t only of the abdominal wall but of other large iscular masses—particularly of the lumbar region d thighs—helps to establish the diagnosis. Walsh d Morgan gave intravenous glucose to one patient th such apparent benefit that they feel encouraged try this treatment on future cases.

Dr. Djamil Tutunji Pasha, of Amman, Trans- dania, informs us of a case [2] of spider-bite which successfully treated with anti-scorpion serum. ie spider was a small black one known locally *Akis*, and its bite is said to be always fatal. The tient, a man of 20, had tonic generalised con- lsions with an abdomen as hard as a board and a ry rapid pulse. An injection of morphine, 0·02 g., d no effect on the pain, and Nembutal was pre- ribed. But 24 hours after the bite the patient was better. An injection of anti-scorpion serum was en given, and within two hours the clinical picture id changed. Pain and sweating ceased, and the hincters relaxed, so that micturition and defæcation ere successful. After four days the patient returned work as an errand boy.

ENDOPHLEBITIS HEPATICA OBLITERANS

R. H. Rigdon [3] reports a case showing obstruction the hepatic veins associated with thrombophlebitis the hepatic portion of the inferior vena cava, of hich condition only a few other examples have een published.

The patient was a woman, aged 22, who when first een was found to have ascites, for which repeated para- entesis became necessary. A splenectomy was performed, nd at the laparotomy the viscera were found normal xcept the spleen, which was enlarged, and on microscopy brotic. The histological findings in a biopsy of the liver ere those of chronic passive congestion. Death occurred bout eighteen months later, shortly after the recurrence f ascites; at the necropsy the liver was enlarged and resented a somewhat "hobnail" appearance. The ortal vein showed no obstruction, but in the intrahepatic ortion of the inferior vena cava several thrombi extending p to 1 cm. into the lumen were found; some of the nouths of the hepatic veins were obstructed by these thrombi, while that of the right hepatic vein was completely obliterated. Microscopically the wall of the inferior cava showed an inflammatory process limited to its intrahepatic portion, but there was nothing to suggest an endophlebitis of the hepatic veins, even though thrombi were attached firmly to them. The clots were sterile. In the first part of the duodenum an ulcer with a necrotic base was discovered.

Rigdon suggests that the peptic ulcer served as a focus of infection from which the phlebitis of the inferior cava arose, though there was no definite evidence of the route followed by the infection. The occurrence of ascites was explained by obstruction by thrombi in the vena cava and hepatic veins, although the absence of conspicuous collateral circulation suggests that the obstruction was not severe enough to cause the development of visible accessory channels. There appears to be little if any justification for the view that endophlebitis hepatica obliterans is a distinct disease entity, and in most reported cases it has been associated with inflammation of the hepatic portion of the inferior vena cava.

CHILDREN'S VIEWS ON DOCTORS

THE report on the West Riding county council scholarship examination mentions that children were asked to write 12 lines about "Doctors." The examiners state that the resulting paragraphs were of all qualities. Many contained good ideas and the tendency to enumeration was less marked than usual. A large number of children, however, could not resist the temptation to enumerate (with disastrous spelling results) the many diseases a doctor can cure. Many showed themselves familiar with the fact that doctors are not always doctors of medicine, but there was general contempt for the other kinds: "There are animal docters, docters of Health, docters of knowledge and docters of Prayer, but they are not so good as curing docters." Most children showed an affection for their doctors, a keen appreciation of their efforts, and complete faith in their ability to cure. "Doctors can cure everything" was the general pronouncement, though a few echoed the boy who wrote "doctors cure you sometimes not often." There was some prejudice against women doctors, panel doctors, and other types. "I would rather have a man doctor because I think *they* know what they are doing." "When doctors are on the panel, it makes them hard. That's when it means, panels of doors are hard." "Prescriptions are written in Latin so that you can't know what you are getting. If you did, the doctors and chemists would lose their profit." But the majority love and trust their doctors, though their reasons are sometimes disconcerting. "Doctors are very kind people. Sometimes they order the schools to close."

A PRESCRIBER'S LIST

AFTER a lapse of two and a half years Messrs. Roberts and Co., of 76, New Bond-street, London, W.1, have issued a new edition of their guide to proprietary medical preparations. The list is alphabetical and nowhere else is it so easy to find information as to the maker, composition, form, price, and dose of such remedies and the indications suggested for them. This fourth edition, despite the removal of some preparations which were rarely demanded, is larger than its predecessor, and the reader may well wonder how many of these myriad weapons used in the war on disease have really any sharpness. Be this as it may, here is a list of most of those most often offered by the manufacturers; and although there are several striking omissions Messrs. Roberts are willing to answer queries submitted to them concerning remedies whose names do not appear. Practitioners may obtain copies, on application, free of charge.

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[1] Amer. Jour. Med. Sci., September, 1933, p. 413.

[2] Folia Med. Intern. Oriental., 1933, i., 233.

[3] Bull. Johns Hopkins Hosp., October, 1933, p. 162.

THE MEDICAL REGISTER

The Registrar of the General Medical Council informs us that orders for the office edition of the Medical Register, 1934, published by the Council at the special price of 10s. per copy, post free, must be received, with a remittance, at the office of the Council, 44, Hallam-street, London, W.1, not later than Dec. 31st, 1933. The office edition differs from the ordinary edition in that it does not contain reprints of the Medical and Dentists Acts and other preliminary matter, and is printed on more inexpensive paper and bound in boards. It includes, however, the same entries relating to registered medical practitioners as are included in the ordinary edition.

The Council also prepare monthly lists of the names added to, and removed from, the Register, and particulars of the terms and conditions upon which copies of these lists may be made available can be obtained on application.

NEW PREPARATIONS

Collosol Halibut Liver Oil.—We have received from the Crookes Laboratories (British Colloids Ltd., Park Royal, London, N.W.10) examples of their new forms of halibut oil preparations. Halibut Liver Oil is a natural concentrate containing no synthetic vitamins, and has not been altered in any way by chemical processes which have been directed towards the securing of pure uncontaminated oil with a high natural vitamin content. The oil is supplied also in capsules. Halidexol is an emulsion miscible in its own volume of water, milk, or wine, making the oil more palatable to many people. Halimalt has been specially devised for the use of weakly children requiring nourishing tonic food, the oil being combined with malt extract. The various preparations are put up in convenient and elegant form. A label is affixed to each bottle of the Collosol Brand Halibut Liver Oil, stating the number of the particular batch, the date of bottling, and the vitamin value by the blue unit B.P. test (10 per cent. dilution), and, thirdly, the biological and spectroscopic tests.

Vagotonine.—The preparation is manufactured by the Byla Establishment, Paris, and put upon the British market by the Anglo-French Drug Co., Guilford-street, London, W.C. This hormone is recommended in the treatment of arterial hypertension and sympathetic imbalance, and its value, it is claimed, has been established by a large number of chemical and physiological tests, while its use has obtained high endorsement. The preparation is supplied in ampoules with full instructions for administration.

Honicose (Honicose Products Sales Ltd., 26, Copper-street, Manchester).—The value of glucose in various forms of exhibition to meet various conditions is well established, but taken by the mouth its insipidity has been an objection to it as an article of diet. Honicose is a blend of glucose sugars with 20 per cent. of honey, and is put on the market with a special view to the diet of children needing the nourishing and energising effects of glucose, while it is also recommended as an addition to the diet of the athlete. The value of an adequate supply of glucose in certain cardiac diseases has been pointed out in a recent leading article in these columns; and in conditions where physical exhaustion is the main trouble to be combated it is reasonable to suppose that Honicose should be of value. Its palatability is of obvious service where children are concerned. It is very conveniently put up by the manufacturers.

Pure Crystalline Vitamin C (Ascorbic Acid B.D.H.).—We have received from The British Drug Houses, Ltd., Graham-street, London, N.1, a sample of this drug recently introduced for industrial and scientific purposes. The product is issued in tablets, each containing 5 milligrammes of the substance, and in this form is suitable for administration either in making isotonic solutions for intravenous injection or for oral exhibition.

CHRISTMAS CHOCOLATES

Chocolates are much in vogue to give to hospital patients where the preparations are permitted. We have received from Messrs. Cadbury Bros., Ltd., a selection of their new specialties. The feature introduced this year consists of a series of boxes specially designed by famous artists, so that after the chocolates of well-known quality have been consumed the box will remain as a reminder of past satisfaction. An addition to the firm's range, which is stated to be extremely popular, is a series of half-pound drums of chocolate biscuits; six of these containers include the milk, table, and B.B. assortments. A tin of Bourn-vita, the food-drink introduced last year, was included in the samples sent.

Wanted: First-aid Lectures.—Mrs. Eva M. Hubback, principal of Morley College for Working Men and Women, 61, Westminster Bridge-road, London, S.E., writes: "We have a class here of about eight unemployed men who have been following a course in first aid. The lecturer is leaving to go abroad for the winter, and I should be most grateful if one of your readers with some experience of teaching would offer to take it. The class meets on Fridays from 2.30 to 4 P.M."

Diiodothyronine.—Messrs. Burroughs Wellcome and Co. inform us that supplies of 3 : 5 diiodothyronine, whose use in myxœdema was described by Dr. A. B. Anderson, Prof. C. R. Harington, and Prof. D. Murray Lyon in our issue of Nov. 11th (pp. 1081 and 1098), may be obtained from them under its chemical name of diiodothyronine.

London Medical Societies.—In the list of societies on p. 1009 of The Lancet of Oct. 28th, the name of the president of the Royal Medico-Psychological Association should have been given as Dr. F. Douglas Turner.

The city address of the Scottish Widows' Fund and Life Assurance Society during rebuilding at 28, Cornhill, E.C.3, is 52, Bishopsgate, London, E.C.2.

Demonstrations of Contraceptive Technique.—The Society for Constructive Birth Control and Racial Progress have arranged for demonstrations to be given by Dr. Evelyn Fisher on Wednesday, Dec. 6th, at 2.30 P.M., at their clinic. They will be open to medical practitioners and senior medical students. Application may be made to the hon. secretary of the society, 108, Whitfield-street, London, W.1.

Births, Marriages, and Deaths

BIRTHS

Downing.—On Nov. 24th, at Newport-road, Cardiff, the wife of Dr. Ralph Downing, of a son.

Kelvin-Davies.—On Nov. 17th, at St. Albans, the wife of D. Kelvin-Davies, L.D.S. R.C.S., of a son.

MARRIAGES

Brockington—Furze.—On Nov. 20th, at Chillington, S. Devon, Colin Fraser Brockington, M.A., M.D., D.P.H. Camb., to Joyce Margaret Furze, only daughter of Mr. and Mrs. A. J. Furze, of Finchley, London.

Walsh—Turner.—On Nov. 23rd, at St. Patrick's Church, Hove, David Henry Walsh, M.D., to Francis Ellen, daughter of the late Henry Rudd, Barrister-at-Law, and widow of Sidney Hyde Turner, Solicitor, of Aldermanbury, E.C.

DEATHS

Bickerton.—On Nov. 23rd, at Rodney-street, Liverpool, Thomas Herbert Bickerton, ophthalmic surgeon, aged 76.

Bourke.—On Nov. 22nd, at Hertford, Lieut.-Colonel John Joseph Bourke, C.I.E., retired officer of the Indian Medical Service.

Partridge.—On Nov. 20th, Victor Stanley Partridge, M.R.C.S., L.R.C.P., of Coldharbour-lane, S.E.

Purves.—On Nov. 23rd, David Bethune Purves, M.B., Ch.B. Edin., aged 30.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

ADDRESSES AND ORIGINAL ARTICLES

EPITHELIOMA PRIMARY IN THE RENAL PELVIS

REPORT OF FORTY-FIVE CASES

BY

HUGH CABOT, C.M.G., M.D., F.A.C.S.

DIVISION OF SURGERY, THE MAYO CLINIC

AND

RAYMOND B. ALLEN, M.D.

FELLOW IN UROLOGY, THE MAYO FOUNDATION, ROCHESTER, MINNESOTA

IMPORTANT contributions to knowledge of epitheliomas primary in the renal pelvis have been made by Albarran, Steusser, Mock, Braasch, Lower, Kretschmer, Broders, Hunt, Speiss, Scholl, and Foulds. Their work has called attention to a comparatively rare but significant form of carcinoma which arises in the mucous membrane of the renal pelvis. Although there is complete uniformity in the type cell of these tumours (squamous cell), these observers have pointed out that there are wide differences in gross appearance, as well as in the degree of cellular differentiation, that is, grades of malignancy which have an important bearing on the natural history of the tumour, the treatment, and the prognosis. The tumour may take one of two gross forms and occasionally may combine features of both. Most commonly the growth is papillary and either partially or completely fills the renal pelvis and calices. Consequently it may obstruct the flow of urine with resulting hydronephrotic atrophy. The papillary type of tumour is further distinguished by a marked tendency to form implants along the ureter and in the bladder, an attribute which is sometimes a source of confusion in the consideration of tumours of the bladder. Less commonly the tumours may be sessile and exhibit invasive qualities spreading by direct extension into the renal parenchyma or, more rarely, through the wall of the pelvis into the perirenal tissue of the hilus and along the renal vessels. Rarely either type, but usually sessile forms, may give rise to distant visceral metastasis.

The present study is an attempt to determine whether the type of the tumour or the method of treatment influences the prognosis in a given case. An analysis of this kind is now possible since a considerable number of cases have been traced over a period of years, and accurate records of the lesion and the treatment are available in the files of the Mayo Clinic. Detailed protocols of the cases under consideration will not be given; however, the essential findings, treatment, and results will be presented (Tables I. and II.). Individual cases in which important features in diagnosis and treatment are illustrated will be commented on more in detail.

INCIDENCE

Forty-five cases of primary epithelioma of the renal pelvis have been seen at the Mayo Clinic in a 26-year period (1907 to 1933). Nineteen of these have been reported by Hunt, Scholl, and Scholl and Foulds, but they are included in the present report (Table I.) because additional data on the duration of life are now available. On the basis of the number of patients registering at the clinic in this same period, the ratio of cases of epithelioma of the renal pelvis is 1 in 18,358 cases. Adenocarcinoma (hypernephroma) was encountered at operation during the same period in 482 cases, thus indicating that adenocarcinoma is approximately 11 times more common than epithelioma of the renal pelvis.

The age-incidence of the patients with primary epithelioma of the renal pelvis varied from 23 to 73 years; the mean age was $53^{2}/_{10}$ years. Of the 45 cases, 33 (73·3 per cent.) were males, and 12 (26·6 per cent.) were females. The cases were evenly divided as to the side involved, the right kidney in 22 cases, and the left kidney in 23 cases.

SYMPTOMS

One or more symptoms referable to the urinary tract were present in all of the cases (data not included in tables). The chief complaint on admission to the clinic was hæmaturia in 19 cases (42·2 per cent.), pain in 19 cases (42·2 per cent.), tumour in the abdomen in 4 cases (8·9 per cent.), urinary frequency in 1 case, weakness in 1 case, and stomach trouble in 1 case. The first symptom noted by the patient was hæmaturia in 24 cases (53·3 per cent.), pain in 16 cases (35·5 per cent.), tumour in 3 cases (6·6 per cent.), and frequency of urination in 2 cases (4·4 per cent.). Hæmaturia was present in 29 cases (64·4 per cent.), and was first noticed by the patient on an average of $23^{5}/_{10}$ months before examination at the clinic. The average range varied from 2 to 132 months. Pain was a symptom in 36 cases (80 per cent.), including all cases (10) in which nephrolithiasis was associated.

DIAGNOSIS

In all of the cases at least one symptom and often several symptoms (hæmaturia, pain, and tumour) directed attention to the urinary tract. However, it was not unusual for the patient to have temporised for many months before seeking urologic or surgical opinion. In all cases of hæmaturia a thorough examination of the upper part of the urinary tract should be made even in the presence of suspected bleeding points in the bladder or urethra. In at least two of the cases treatment had been given for what was assumed to be hæmorrhagic cystitis or pyelonephritis for several months before the true nature of the disease was discovered. Renal pain and renal tumour of course always require careful investigation. Before the advent of exact methods of urologic diagnosis it was usually impossible to recognise renal tumours except by operation. With the aid of the ureteral catheter and fluid mediums opaque to Roentgen rays, either injected (retrograde pyelogram) or excreted (intravenous or excretory urogram) into the renal pelvis, it is now possible in a high percentage of cases to make a presumptive diagnosis of tumour, basing the diagnosis on the deformity produced in the outline of the pelvis and calices. It is not always possible to predict from a pyelogram the character of the tumour; nevertheless the pyelogram has many times proved its value by indicating the site of neoplastic disease, and therefore is of inestimable value to the surgeon. Comparison of the deformity as visualised in the pyelogram with the deformity as seen in the specimen after surgical removal has developed a high degree of accuracy in the clinical recognition of the various forms of renal tumour.

Epitheliomas primary in the renal pelvis will usually produce a filling defect in the pyelographic

TABLE I.—SUMMARY OF DATA ON CASES PREVIOUSLY REPORTED

Author.	Case.	Age and sex.	Type and date of operation.	Radiotherapy.	Surgical and pathological findings.							Comment.
					Tumour.				Kidney.			
					Gross description, size.	Grade of malignancy.	Extension.	Implants.	Amount destroyed, per cent.	Hydronephrosis, grade.	Stone.	
Scholl and Foulds	1	62 M	R. nephrect. and partial ureterect., Aug., 1922.	0	P. and S. (huge and *invasive*).	High.	0	0	100	4	+	D. March, 1927, 55 m. after operation; apoplexy.
	2	53 F	R. nephrect. and partial ureterect., June, 1920.	0	S. (invasive).	,,	Along renal vein.	0	50	0	0	D. July, 1920, 11 days after op.
	3	54 M	R. nephrect. and partial ureterect., May, 1909.	0	P. and S. (invasive).	Moderate.	..	0	90 +	0	+	D. July, 1909, 2 m. after op.; metastasis to liver.
	4	51 M	R. nephrect. and partial ureterect., Aug., 1915.	0	S. (invasive).	,,	0	0	100	0	+	D. at home Oct., 1915, 2 m. after op.
	5	64 M	L. nephrect. and partial ureterect., Nov., 1907.	0	,,	,,	0	0	50 +	0	+	D. at home more than 5 m. after op.
Scholl	6	48 M	R. nephrect. and later ureterect., Feb., 1922.	0	P. (large).	2	0	0	20 +	4	0	D. at home Aug., 1924, 30 m. after op.
	7	61 M	L. nephrect. and partial ureterect., Feb., 1921.	0	,,	2	0	0	100	4	0	D. at home Aug., 1921, 6 m. after op.
	8	46 M	Fulguration bladder tumour; L. nephrect. and ureterect., Nov., 1922.	0	,,	2	0	Ureter, bladder.	60 +	2	0	D. at home Sept., 1923, 9 m. after op.
	9	65 M	L. nephrect. and partial ureterect., March, 1919.	0	,,	2	0	0	40 +	3	0	Living Aug., 1932, 12 yrs. and 5 m. after operation.
	10	34 M	L. nephrect. and partial ureterect., Feb., 1919; stump of ureter and papilloma of bladder removed, Nov., 1919.	Radium to bladder.	,,	2	0	Nov., 1919, bladder tumour.	60 +	4	0	D. at home Nov., 1926, 7 yrs. and 9 m. after op.
	11	49 M	L. nephrect. and partial ureterect., fulguration of bladder tumour, Sept., 1919; later ureterect. and removal of bladder tumour.	Radium and X ray to bladder tumour.	Papillary (3 × 3 × 4·5 cm.).	2	..	Recurrent bladder tumour.	10 –	2	0	Living Aug., 1932, 13 yrs. after op.
	12	55 M	L. nephrect. and partial ureterect., Nov., 1917; ureterect. and segmental resection of bladder, Jan., 1919.	Radium and X ray; March, 1920, radium suprapubic fulguration.	P. (large) (5 × 6 cm.).	2	..	,,	10 –	2	0	D. March, 1921, 32 days after segmental resection of bladder, 25 m. after first operation.
	13	47 M	R. nephrect. and partial ureterect., May, 1910.	..	P. (large) (10 × 12 cm.).	2	0	0	20 +	+	+	D. at home Oct., 1910, 5 m. after op.
Hunt *	14	54 F	L. nephrect. and partial ureterect., June, 1924.	0	P. (large).	3	0	0	60	4	0	D. March, 1930, 69 m. after operation; heart attack.
	15	57 F	R. nephrect. and partial ureterect., March, 1926.	0	P.	4	0	0	10 +	1	0	D. March, 1927, embolism, 10 days after segmental resection of bladder, 1 yr. after first op.
			Ureterect. and segmental resection of bladder, Feb., 1927.	0	,,	4	..	Ureter.	..	..	..	
	16	42 M	R. nephrect. and partial ureterect., Jan., 1927; ureterect. and segmental resection of bladder two weeks later.	0	P. (6 × 4 × 3 cm.).	2	0	0	10 +	1	0	Living Aug., 1932, 68 m. after op.
	17	40 F	L. nephrect. and complete ureterect., Feb., 1927.	0	P. (1 cm.).	2	0	Bladder and ureter.	100	4	0	Living and well Jan., 1932, 60 m. after operation.
	18	44 M	L. nephrect. and complete ureterect., Feb., 1927.	0	P.	2	0	..	20 +	2	0	Living Aug., 1932, 66 m. after op.

P. = papillary; S. = sessile; D. = died; m. = months. +, stone.

* Hunt's Case 9 was the same as Case 1 reported by Scholl and Foulds; his Case 11 was a case of epithelioma primary in the upper portion of the ureter, there was no tumour in the pelvis.

outline of the renal pelvis and calices (Figs. 1 and 2). When the tumour is complicated by hydronephrosis, especially if marked, the filling defect may be obscured and is therefore often overlooked. It thus happens that many cases of epithelioma are not detected until the hydronephrotic kidney is removed at operation. Occasionally a filling defect is produced by a soft non-shadow casting stone which cannot be distinguished from papillary epithelioma. A blood clot in the pelvis and granulomatous lesions may also be causes of filling defects in a pyelogram. An epithelioma of the pelvis will sometimes distort the outline of the calices to a very marked degree, making it difficult to distinguish such a tumour from an adenocarcinoma rising in the parenchyma of the kidney. This is well illustrated by pyelograms (Cases 42 and 38, Figs. 3 and 4), which have many of the characteristics of adenocarcinoma (hypernephroma) of the kidney. Not infrequently the diagnosis of epithelioma of the pelvis is missed because a papillary tumour of the bladder is thought to be the source of the hæmaturia. Since, as has been mentioned, a large fraction (one-third in this series) of papillary tumours of the renal pelvis form implants in the ureter or bladder, the kidneys must always be excluded as a possible site of origin of vesical tumours. This can be accomplished in most cases by the simple expedient of making an excretory (intravenous) pyelogram. If, however, a functionless kidney is discovered to be associated with tumour of

TABLE II.—SUMMARY OF DATA ON PRESENT SERIES OF CASES

Case.	Age and sex.	Type and date of operation.	Radiotherapy.	Surgical and pathological findings.							Comment.
				Tumour.				Kidney.			
				Gross description, size.	Grade of malignancy.	Extension.	Implants.	Amount destroyed, per cent.	Hydronephrosis, grade.	Stone.	
19	68 F	R. nephrect. and partial ureterect., Aug., 1923.	0	P. (4 × 3 × 2 cm.).	3	0	0	10–	1	0	D. at home March, 1927, 43 m. after operation.
20	44 M	R. nephrect. and partial ureterect., Aug., 1925.	0	P. (large, invasive).	3	0	0	100	4	÷	D. at home Nov., 1925, 2 m. after operation.
21	50 M	R. nephrect. and partial ureterect., Sept., 1926.	Radium to sinus.	,,	3	Capsule renal vein.	0	60	Pyonephrosis	0	D. at home Dec., 1926, 3 m. after operation; carcinoma.
22	52 M	R. nephrect. and partial ureterect., Dec., 1926.	0	P. (large) (7·5 × 12 cm.).	4	0	..	100	4	0	D. March, 1929, 26·5 m. after first op.; recurrent abdominal tumour.
		R. ureterect. and segmental resection of bladder, Oct., 1928.	0	P.	4	..	Ureter, bladder.	..	..	..	
23	52 M	R. nephrect. and partial ureterect., Sept., 1926.	Radium to sinus; X ray.	P. (invasive).	3	Ureter capsule psoas muscle.	..	100	Pyonephrosis	0	D. at home Nov., 1926, 1·25 m. after operation.
24	67 M	R. nephrect., ureterec., and segmental resection of bladder, Aug., 1927.	0	P.	3	0	Ureter.	100	4	0	D. at home Aug., 1929, 24 m. after operation.
25	41 M	R. nephrect. and partial ureterect., Aug., 1927; ureterect. and segmental resection of bladder, Sept., 1927.	0	P. (31 × 26 × 12 cm.)	3	0	,,	100	4	0	Living Dec., 1932, 64 m. after operation; extensive recurrence in bladder, palliative X ray therapy.
26	47 M	L. subcapsular nephrect. and partial ureterect., Dec., 1927.	X ray.	P. (2 × 4 × 4 cm.).	4	Perirenal fat at hilus.	..	100	4	0	No recurrence 48 m. after operation.
27	56 M	R. nephrect. and partial ureterect., March, 1928.	0	P. (5 × 3 × 2 cm.).	2	0	0	10	1	0	D. at home, Jan., 1931, 34 m. after operation.
28	60 M	L. nephrect. and partial ureterect., April, 1928.	0	P. (multiple tumours of pelvis).	2	0	Ureter, bladder.	100	4	0	D. May, 1928, 2 weeks after second op.; peritonitis, pneumonia.
		L. ureterect. and segmental resection of bladder, May, 1928.	..	..	..	..	,,	..	..	..	
29	67 M	L. nephrect. and ureterect., April, 1928.	Radium to sinus; X ray.	P.	3	Along sinus.	0	75	4	0	D. at home Nov., 1928, 7 m. after operation.
30	41 M	L. nephrect. and partial ureterect., Sept., 1928.	0	P. (2·5 × 2·5 × 1 cm.)	1	0	0	10	1	0	Well 48 m. after op.
31	54 F	L. nephro-ureterect., Sept., 1928.	X ray, radium.	P.	4	..	Ureter.	90	4	0	D. Feb., 1929, 4 m. after op.; recurrent tumour.
32	61 M	L. nephrect. and partial ureterect., Jan., 1929.	0	S. (invasive).	2	Peritoneum, perirenal fat.	0	90	2	0	8 m. after op. stomach trouble; otherwise well.
33	56 F	L. nephrect. and partial ureterect., July, 1929.	0	P. (9 × 5 × 5 cm.).	3	0	0	100	Pyonephrosis	+	D. Nov., 1930, 16 m. after operation; recurrence; X ray.
34	69 F	R. nephrect. and partial ureterect., Sept., 1929.	Radium.	P. (6 × 4 × 2 cm.).	3	0	0	100	4 infected.	÷	D. at home Nov., 1929, 2 m. after operation.
35	68 F	R. nephrect. and partial ureterect., Nov., 1929.	0	P. (2·5 × 2 cm.).	2	0	0	10	0	0	Well 29 m. after op.
36	47 M	L. nephrect. and partial ureterect., Dec., 1929.	0	P. and S. (invasive) (10 × 9 × 8 cm.).	3	Retroperitoneal.	Ureter.	90	4	0	D. Jan., 1933, 10 days after op.; metastasis to liver, syphilis.
37	49 M	L. nephro-ureterect., July, 1930.	X ray.	P. (fills pelvis).	2	0	0	50	2	0	Living Aug., 1933, 36 m. after op.; recurrent bladder tumour.
38	49 M	L. nephro-ureterect., Sept., 1930.	0	P. (5 × 5 × 4 cm.).	1	0	0	40	Hæmorrhagic cyst of cortex.	0	No recurrence 24·5 m. after operation.
39	54 M	R. nephrect. and partial ureterect., Sept., 1930.	X ray (5 courses).	P. (8 × 5 × 2·5 cm.).	3	Peripelvic tissue.	0	100	4 infected.	*	D. at home 6 m. after operation.
40	50 F	R. nephro-ureterect., Dec., 1930.	Recurrent bladder tumour, treatment by fulguration.	P. (5 × 4 × 2 cm.).	2	0	0	10	2 infected.	÷	Well 24 m. after operation.
41	58 F	R. nephro-ureterect., Sept., 1931.	X ray (5 treatments).	Multiple flat areas.	2	0	Ureter ÷	100	4 hæmorrhage infected.	0	Well 2 m. after operation.
42	73 M	L. nephrect. and partial ureterect., Feb., 1932.	Radium in drainage-tube.	P. (10 cm.).	3	0	0	60	3	0	D. at home Nov., 1932, 9 m. after operation; metastasis.
43	25 F	L. nephro-ureterect., Aug., 1932.	X ray.	P. (lower calyx incrsted).	2	0	0	30	0	0	Well 9 m. after op.
44	49 M	R. nephrect. and partial ureterect., Dec., 1932.	0	P. (invasive).	3	Peripelvic parenchyma.	Bladder (fulguration).	90	3	0	Living 5 m. after op.; recurrence of bladder tumour.
45	57 M	L. nephro-ureterect., July, 1932.	0	P. (4 × 3 × 1 cm.).	3	0	Ureter.	70	4 infected.	÷	In clinic Feb., 1933, 7 m. after operation; examination negative.

* Calcareous deposit. ÷, stone.

the bladder, it should not be assumed that the failure of function is secondary to the lesion in the bladder, because this lesion may be an implant from a papillary epithelioma in the renal pelvis which has destroyed the kidney. For example, in Case 25 cystoscopy revealed a papillomatous tumour graded 3 (Broders' method; v. infra) in the region of and apparently obstructing the ureteral meatus, since it would not admit a catheter. A large cystic mass in the abdomen proved to be a huge hydronephrotic sac containing papillary epithelioma graded 3. In August, 1927, complete nephro-ureterectomy and segmental resection of the adjacent wall of the bladder were done in two stages. The patient was well until the autumn of 1932 when hæmaturia recurred, and by December, when he was again examined, a recurrent lesion involved half of the bladder and appeared to extend beyond the bladder. A supraclavicular lymph node was enlarged and was thought to be the site of a metastatic lesion from the bladder. Palliative Roentgen ray treatment was instituted.

In brief, then, all cases of tumour of the bladder, especially those which involve the ureteral meatus, all cases of unexplained hæmaturia of possible renal origin, all cases of hydronephrosis including those associated with stone, and all cases in which there is renal pain, should be examined carefully for evidence of epithelioma primary in the renal pelvis. A positive pre-operative diagnosis is often difficult and may be impossible, especially in cases of advanced hydronephrosis or obstruction of the ureter.

SURGICAL AND PATHOLOGIC DATA

Marked hydronephrotic atrophy with virtual destruction of the kidney was present in 21 cases (46·6 per cent.), and lesser degrees of hydronephrosis were present in 17 cases (37·7 per cent.). There were in all 38 cases (84·4 per cent.) of hydronephrosis. Lithiasis was noted in 10 cases (22·2 per cent.), which included 5 of the 10 cases in which the tumour was sessile or invasive. Scholl, Foulds, and others have called attention to this association and suggest that it might be of ætiologic significance.

The tumour was papillary in 33 cases (73·3 per cent.) and localised to the renal pelvis in 20 cases (44·4 per cent.). Implants in the ureter or bladder were present in 13 cases (28·8 per cent.). The tumour was sessile or invasive in 10 cases (22·2 per cent.). The neoplasm had invaded perirenal tissue in 7 cases (15·5 per cent.).

With Broders' method of classifying neoplasms according to the degree of cellular differentiation, growths with the greatest degree of differentiation of cells (75 to 100 per cent.) and the least malignant are graded 1, and those with the least degree of differentiation (0 to 25 per cent.) and the most malignant are graded 4. Grades 2 and 3 are intermediate forms. In this series there were 2 tumours graded 1 (4·4 per cent.), 21 graded 2 (46·6 per cent.), 18 graded 3 (40 per cent.), and 4 graded 4 (8·8 per cent.).

TREATMENT

Nephrectomy and partial ureterectomy was done in 26 cases (57·8 per cent.). Nephrectomy and total ureterectomy with segmental resection of the adjacent wall of the bladder was done in 13 cases (28·8 per cent.). Nephrectomy with partial ureterectomy followed by total ureterectomy, and segmental resection of the bladder at a later time, was done in 6 cases (13·3 per cent.). Some form of radiation (radium or Roentgen ray) was instituted after operation in 14 cases (31·1 per cent.).

MORTALITY

The operative mortality was 6·6 per cent. (3 cases). The patient in Case 2 died on the eighth day, apparently from pulmonary embolism. The patient in Case 28 died from peritonitis and bronchopneumonia two weeks after a difficult ureterectomy had been performed. The patient in Case 36 died ten days after the operation, and necropsy disclosed metastatic lesions in the liver and regional lymph nodes and syphilitic aortitis.

DURATION OF LIFE AFTER OPERATION

Of the 45 patients in the series, 28 are known to be dead, 3 having died in hospital and 25 in their homes. The remaining 17 patients have been traced or have recently been seen at the clinic. Excluding the 3 deaths in hospital, the average duration of life after operation of the 25 patients known to be dead was $19^{2}/_{10}$ months (range of 2 to 69 months). The average duration of life of the 15 living patients is 49 months (range of 2 to 156 months). This group includes 6 patients who have outlived 5 years, 2 of whom have passed 12 years. Five patients when last heard from were in their first year following the operation. Eight of the entire series have outlived 5 years, a group which represents 25·8 per cent. of the 31 patients who are either dead (25) or have lived 5 years after operation (6).

Tumours with implants in ureter or bladder.—When the cases are studied with reference to evidence of implants in the ureter and bladder and invasion of the parenchyma of the kidney and perirenal tissue, striking differences appear in the duration of life. In 18 cases the tumour was papillary and entirely limited to the renal pelvis or calices. The average duration of life in this group was $35^{1}/_{10}$ months; 7 patients are still living.

In 15 additional cases the tumour was also papillary, but these cases are grouped separately because implants were present (or developed later) in the ureter or bladder. The average duration of life in this group (excluding the patients in Cases 28 and 36 who died in hospital) is $39^{6}/_{10}$ months. Of this group 4 patients are still living. The average duration of life in the two groups taken together is 37 months. These groups include 13 cases (59·1 per cent.) of the 22 cases in which the tumours were graded 3 or 4, or 41·9 per cent. of the 31 cases.

Tumours with invasion of renal parenchyma.—In 10 cases the tumour had invaded the renal parenchyma from either a papillomatous or a sessile primary lesion. In this group (excluding two patients who died in hospital) the average duration of life was significantly shorter than in previous groups, namely, $10^{2}/_{10}$ months. Two patients of this group are still living (Cases 32 and 44). However, as one might expect, a larger proportion of the lesions (70 per cent.) of this group were graded 3 or 4 (31·8 per cent. of all tumours graded 3 or 4).

Tumours with invasion of perirenal tissue.—In 8 cases the tumour had invaded the perirenal tissue. The average duration of life in this group was $11^{1}/_{10}$ months, which includes 3 cases in which the patients are still living. Again in this group in 6 of the 8 cases (75 per cent.) the lesions were graded 3 or 4 (27·2 per cent. of all lesions graded 3 or 4).

Duration of life according to grade of malignancy.—Tumours graded 1: The two patients with tumours graded 1 are both living (Cases 38 and 30) 30 months and 48 months respectively after operation. Tumours graded 2: Excluding the patient who died in hospital (Case 28), the average duration of life of the 20 remaining patients with tumours raded 2 is $40^{9}/_{10}$ months (range 2 to 156 months).)f these, 10 patients are still living. Tumours raded 3: After excluding the two hospital deaths Cases 2 and 36) the average duration of life of the emaining 16 patients with tumours graded 3 was nly $17^{1}/_{10}$ months. Three of these patients are still ving. Tumours graded 4: Contrary to what night be expected, the average duration of life of he 4 patients with tumours graded 4 is quite long, $3^{4}/_{10}$ months. Of this group, 1 patient (Case 36) s still living 4 years after operation.

EFFECT OF OPERATIONS

Nephrectomy and partial ureterectomy.—Twenty-six atients were treated by nephrectomy and partial reterectomy; of these, 2 died in hospital (Cases 2 nd 36). The 24 remaining patients lived an average f $23^{1}/_{10}$ months (range 2 to 149 months); 7 are still iving. Seventeen patients (65·3 per cent. of this roup) had tumours graded 3 or 4, representing 7·2 per cent. of all tumours graded 3 or 4.

Complete nephro-ureterectomy and segmental resection f adjacent wall of bladder.—This operation, either n one or two stages, was performed on 19 patients, of whom (Case 28) died in hospital. The 18 remaining patients lived an average of $37^{8}/_{10}$ months (range to 156 months) after operation. Of this group, 10 patients are still living. Three patients are till in the first post-operative year. Five patients n this group (26·3 per cent.) had tumours graded 3 or 4, epresenting 22·7 per cent. of all tumours graded 3 or 4.

Roentgen ray and radium.—Some form of deep adiation was instituted post-operatively in 14 cases. Radium was applied in 4 cases (Cases 21, 34, 42, and 10) through the drainage-tube to the renal area. The first two patients lived 2 months each, and the other two 9 months and 93 months respectively; the last patient had a tumour graded 2. Deep Roentgen rays was administered in 5 cases (Cases 26, 37, 39, 41, 43); the patients survived an average of $20^{2}/_{10}$ months. The patient in Case 26 had a tumour graded 4 and is still living after 4 years. Combined Roentgen and radium treatment was carried out in 5 cases (Cases 11, 12, 23, 29, 31) with an average duration of life of $38^{6}/_{10}$ months. Three of these patients had tumours graded 3 or 4; the average duration of life was $4^{2}/_{10}$ months.

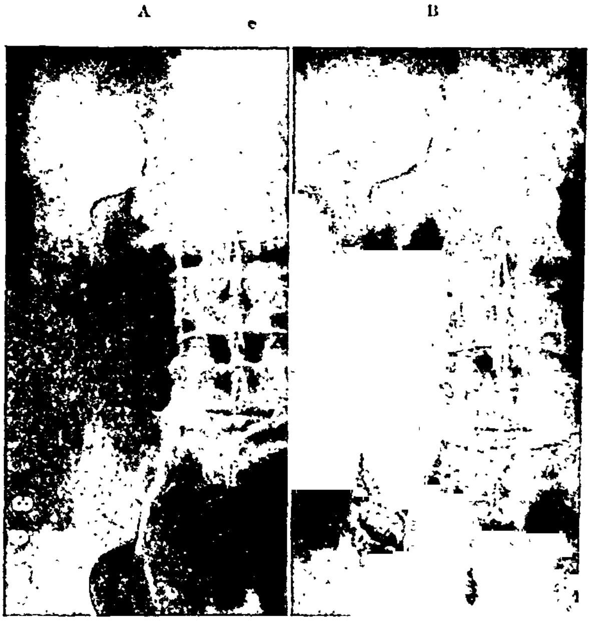

FIG. 1 (Case 27).—Filling defect suggested by the appearance of the pelvic outline in pyelogram A. Pelvis overfilled. Defect clearly shown in B when pelvis is not distended with a medium.

CONCLUSIONS

From this study of 45 cases of epithelioma primary in the renal pelvis, certain conclusions appear to be warranted:—

1. These neoplasms, although rare, constitute a well-defined variety of carcinoma, and they may be diagnosed by present methods in a large proportion

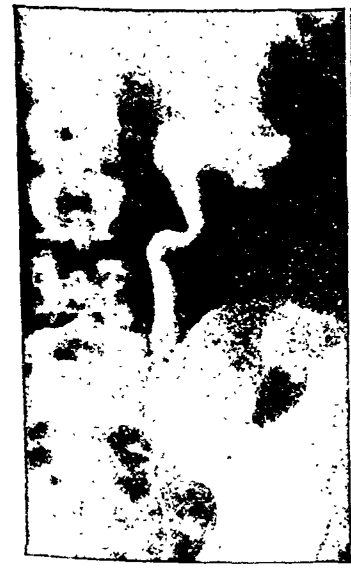

FIG. 2 (Case 36).—Numerous filling defects of pelvis and calices resulting in moderate dilatation. A ureteral implant (not visualised) caused moderate ureterectasis.

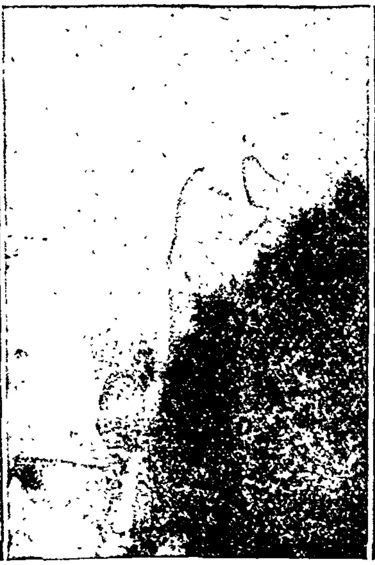

FIG. 3 (Case 38).—The superior calix is obliterated by the tumour. Deformities of this kind may be produced by a neoplasm arising in the renal parenchyma such as adenocarcinoma.

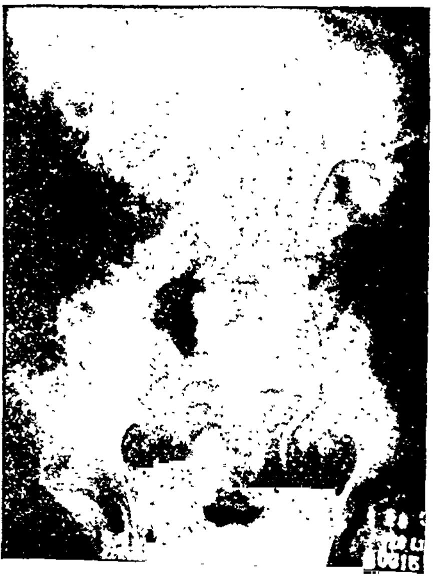

FIG. 4 (Case 42).—Partial obliteration and elongation of the superior calix. Elongation and distortion of the middle calix. This deformity is difficult to distinguish from that produced by adenocarcinoma.

of cases. In a few cases exploration is necessary to establish the diagnosis.

2. In this series symptoms had been present on the average two years before examination at the Mayo Clinic, and in many cases temporising treatment had been employed without adequate urologic investigation. It is reasonable to believe that with earlier diagnosis and treatment the prognosis in these cases will improve.

3. The prognosis is more favourable in the group of papillary tumours (37 months), when transplants have not formed in the ureter or bladder. The prognosis was definitely less favourable in the cases in which the lesion had invaded the renal parenchyma ($10^{2}/_{10}$ months) and the perirenal tissue ($11^{1}/_{10}$ months).

4. Tumours graded 1 (39 months) and 2 ($40^{9}/_{10}$ months) afforded a better prognosis than tumours graded 3 ($17^{1}/_{10}$ months). Four patients with tumours graded 4 survived an average of $33^{4}/_{10}$ months; this is encouraging, but the number of cases is too small to warrant a conclusion.

5. Total nephro-ureterectomy and segmental resection of adjacent wall of the bladder affords the best prognosis ($37^{8}/_{10}$ months).

6. Radiotherapy (radium and Roentgen rays) did not apparently alter the prognosis in a limited number of cases in which it was administered. One patient with a tumour graded 4 received Roentgen ray treatment and is still living four years after operation.

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WARD AND DORMITORY INFECTIONS *

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Had a meeting been summoned in this place 65 years ago, to discuss the problem which engages us to-night, it were highly probable that James Young Simpson would have been here with tales of hospitals swept by pestilence and fevers. He would have reminded his listeners that in our large city hospitals half of those whose legs were amputated died shortly of pyrexia, gangrene, or erysipelas; that an amputation of the forearm carried the risk of death to one in five; that it was ten times safer to have an operation done by a country practitioner in a village house than by a skilful surgeon in a ward made "insalubrious by morbific hospital influences." With fervour he would have said that many hospitals do more harm than good; that they were "pest-houses, the air and walls of which were contaminated with putrefying substances passing from one sick body to another." He would have poured contempt on a pedantic report of "a Mr. Holmes" and "a Mr. Bristowe," published in a Government Blue-book for the Privy Council, which attempted to condone the excessive mortality of hospitals. No doubt he would have found time to pour cold water on the view of a young Mr. Lister that the problem of "hospital fever" could be solved by using carbolic acid in the wards. We may cavil at Simpson's petulant criticisms of Lister, but the danger of what he called "hospitalism" had been one of the chief concerns of his professional life. He had reached a stage of firm conviction that ward infections were to be prevented only by the building of small salubrious hospitals in ample space and with abundant fresh air, and we must admit that the fanaticism with which he advanced his views contributed largely to the reforms in hospital construction which slowly followed. He pointed the way by using these words in opening his last contribution to the subject:

> "Perhaps one of the most weighty and momentous questions to which at the present day the physician, the surgeon, and the accoucheur could direct his attention is the proper reconstruction and arrangement of our hospitals."

I take this backward glance to a familiar historical scene so that it may help us to preserve a sense of proportion in this discussion to-night. Ours is a world pricked to anxiety by journalistic descriptions of epidemics of this and outbreaks of that in schools and institutions. This mass suggestion acts fearfully in these days when, as Mr. Aldous Huxley has said, there are so many people, especially women, for whom bacilli have taken the place of the Devil, and microbes have become the personification of evil. For the sake of these people let us recognise what has been achieved in the last 65 years, and how safely we now live. It is an evident fact that infections will spread where people most do congregate, be it in wards, dormitories, or sewing meetings; but it is salutary to recognise how relatively free are most hospitals and schools from the dangers of epidemic diseases.

We shall have the advantage of listening to two other speakers with special knowledge of the technical problems concerning the bacteriology and mode of spread of infections in wards and dormitories. It will be my endeavour to outline the problem as it is seen through the eyes of one whose responsibility it is to choose patients who may be rightly and properly treated in hospitals, and whose duty it is to care for them when they are in hospitals. In this I am helped by experience of work in the wards of a general hospital, and of an infants' hospital. I am further helped by contact with the work † in two colonies for mentally defectives, an orthopædic hospital school, a "cottage homes" institution, a home for deaf-and-dumb children, a Salvation Army house for infants, and a children's sanatorium.

INSTITUTIONAL INCIDENCE

It is desired to limit the scope of our discussion by dealing with infectious diseases other than the exanthemata, but for comparison I shall not exclude these entirely.

On inquiry into the frequency of the various infectious diseases in different institutions it becomes evident that the incidence of the common infectious diseases is largely a resultant of the age of the inhabitants, the social class from which they are drawn, and the type of work carried on in each institution. Thus each has its own individual problem according to its type and personnel. A home or school for better-class children who have been carefully safeguarded in early childhood will sooner or later be swept with measles, chicken-pox, and mumps. For comparison I may quote the example of a home for mentally defectives, in which there is free visiting and contact with the outside world. Its inhabitants are drawn from the poorest classes and are all above the age of 5.

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* Contribution to a discussion at the Medical Society of London, Nov. 27th, 1933.

† In regard to information from these institutions I am particularly indebted to Dr. G. McCoull, Dr. W. Mackenzie, Dr. W. Holmes, Dr. Ian McCracken, Dr. M. Macnaughton, and Dr. T. C. Hunter.

There are 430 inmates in this home, and during the past five years there have been 6 cases of measles, 10 cases of mumps, 5 cases of scarlet fever, 21 cases of chicken-pox. In 1931 there was an outbreak of influenza which affected 199 of the inmates with no deaths. There were no cases of typhoid, no dysentery, no diphtheria. In another similar home for mentally defectives with 400 inmates there were in five years only 5 cases of measles, 14 cases of scarlet fever, 14 cases of diphtheria, and an outbreak of influenza in 1931 yielding 167 cases of influenza—but no other infectious diseases.

In another institution housing 220 normal children between the ages of 3 and 14 years, but all drawn from the poorest classes of the city's slums, there has been during the past five years only one outbreak of infectious diseases in which 60 children were affected with whooping-cough. Apart from this there has been one case of scarlet fever, and a few cases of measles and mumps, but no other infectious diseases.

In another institution, a resident school for 120 deaf-and-dumb children between the ages of 5 and 16 years, 30 of whom have chronic ear discharges, there is more sickness amongst the staff of 20 than amongst the children, due mainly to the high incidence of septic tonsillitis. The only notably infectious diseases amongst the children have been two outbreaks of pneumonia affecting 12 children on one occasion and 15 on another, and a high constant incidence of septic skin infections.

These examples reveal how peculiar are the problems to each type of institution. This makes the comparison of the incidence of various diseases in such places as I have mentioned with the incidence in hospitals difficult and unreliable. For this reason I will attempt to summarise my observations on ward and dormitory infections by separating hospitals from other institutions. And further, since the problem of infections amongst infants is so different from that amongst older children and adults, I will for the moment leave it aside.

In five institutions of various types, not being hospitals, with a total inmate population of about 1650 people all above the age of 3 years, the following have been the chief occurrences of ward and dormitory infections (excluding the exanthemata, diphtheria, mumps, whooping-cough, chicken-pox) during the period of the past five years:

In one institution there were two outbreaks of bacillary dysentery with 38 cases on one occasion and 9 on another. There were no deaths. In the other institutions there were no cases of dysentery.

In one institution—a deaf-and-dumb school—there were two outbreaks of lobar pneumonia, affecting 12 children on one occasion and 15 on another. In no other institutions were there similar outbreaks.

Epidemics of influenza occurred in four of the institutions in the year 1931, affecting 460 of the inmates.

Chronic skin sepsis is constant and frequent in the home for deaf-and-dumb children where the incidence of ear discharge is high.

Septic tonsillitis is frequent (exact number not available) in three of these institutions, but very rare in the others in which the inmates are free to move about out of doors.

On the negative side there have been no cases of typhoid, paratyphoid, poliomyelitis, encephalitis, meningococcal meningitis, mastoiditis, or catarrhal jaundice in these institutions.

HOSPITAL WARD INFECTIONS

Satisfactory estimates of the incidence of infections gathered in hospital wards are difficult to reach. Many of the cases which are discovered there have been infected before admission, but came to hospital "for observation," "for investigation," or with a wrong diagnosis. The true nature of the disease is mistaken on admission, and the cases find their way to the wards—paratyphoid as appendicitis, typhoid as pneumonia, and dysentery as food poisoning. A further difficulty is that patients who stay in hospitals for short periods may there be infected and yet not develop signs of disease until after discharge. I do not intend to avoid the unpleasant truth that infections do arise and are transmitted within the wards, but to describe this I shall rely on the narration of clinical experiences, dealing first with those concerning adults and older children, and later with those concerning infants.

Let us first dispose of those septic infections, truly known as "hospital gangrene" and "hospital fever," which were such a menace to life and limb of all who were admitted to surgical wards before the days of Lister, Simpson, Lawson Tait, and the Commissioners of THE LANCET who inquired into the state of infirmaries at that time. These days are gone and almost forgotten. Operations are now considered to be safe from these dangers. As a physician I do not see sufficient of the routine work of surgical wards to state categorically that this is an absolute safety, and I may be permitted to ask if traces of the danger still linger. I can well imagine that, given overcrowding in surgical wards of a busy hospital in an industrial city with its numerous accident cases, "hospital fever" might raise its head again, in spite of the ritual of the dressing bogy and finger dipping of the surgical dressers.

A few years ago I was asked to see a young woman of 18 lying in a surgical ward of an outlying hospital. For 18 days after a clean operation for "interval appendicitis" she was afebrile and well. She then began to run a temperature rising to 101° F., with rapid pulse, no adequate physical signs of local disease being found to account for it. Her appearance suggested the febrile illness so frequently seen with a streptococcal infection. Next to her was an "extra bed" interplaced in very close proximity on account of the crowded condition of the ward. In it lay a woman with a septic mastitis requiring frequent dressing. I felt justified in diagnosing a ward-contact infection, serological and clinical examination having failed to demonstrate any other causes. The febrile illness lasted six days and ended in recovery.

This is not an isolated case. I have seen others like it. I would suggest that whenever an unexplained attack of "P.U.O." or "influenza" arises in a surgical ward and affects a child or young adult, the possibility of streptococcal infection should be considered. In some cases an actual tonsillitis accompanies it, typical of the "hospital sore-throat" common to young nurses and students, but in other cases the localisation of the infection is not apparent, and the younger the child the more likely is this to be so.

While we admit that septic infections in the general wards of hospitals are now rare, after inquiry it appears to me that some danger still exists in the chance of the enteric group of fevers and bacillary dysentery being introduced amongst bedridden patients. I have approached this problem with the help of Dr. J. A. Charles, our medical officer of health, who has devoted considerable time to its study. He is in a position to estimate the frequency of hospital outbreaks of these diseases by having within his curtilage the large general hospitals of the city, and numerous smaller hospitals in the city and surrounding district. His records show that during the past five years there have been two hospital outbreaks of paratyphoid fever, and 12 small outbreaks of bacillary dysentery, in addition to those two I have already mentioned as occurring in an institution which was not a hospital. One paratyphoid outbreak affected 12 cases in two surgical wards for females, and from it there were four deaths. No actual source of infection was ever traced, but it is probable that it was introduced into each ward from outside and spread from case to case by the ordinary methods of direct and indirect contact. The outbreak was brought to an end after closing the wards for admission. The other hospital outbreak of paratyphoid infection affected 17 children and nurses, with three deaths.

The outbreaks of bacillary dysentery in hospitals have been more numerous but less dangerous. In 12 separate outbreaks in various hospitals over a period of four years, 75 cases were affected with four deaths. Bacillary dysentery remains a relatively common disease in this country, especially among children. In many cases it shows itself as a short illness with intestinal symptoms lasting two or three days and prompt recovery. If these figures suggest an unduly high incidence, I think the explanation is that the diagnosis rate was high and can be attributed to the zeal with which Dr. Charles and his staff survey and control the problem.

There is but one other type of ward infection which I would mention. That is contact infection of children or adolescents with tuberculosis. Though rare, this remains as a distinct possibility. Runge's account of the tuberculous midwife reveals the danger. She made it a habit of trying to resuscitate children with asphyxia by aspirating the mucus with her own mouth. In the course of 13 months ten of these children died of tuberculous meningitis; whereas in the practice of other midwives in the same place, not a single child contracted the disease. Last year in a continental sanatorium I was shown three girls each with evidence of a serious form of the childhood type of lung tuberculosis. This had been acquired in a surgical ward of a city hospital, where the girls congregated daily round the bed of a patient with tuberculous hip disease who had a cough and was later found to be expectorating tuberculous sputum.

These occasional experiences suggest, I think, that while the bad old days of hospital infections are past, there still linger slight dangers which, however, can be largely avoided by alert clinical control of admissions and by proper disposal and arrangement of the patients in the wards.

INFECTIONS IN INFANTS' WARDS

We may view with pride or complacency all that has been achieved to prevent and control the spread of infection amongst older children and adults, but there is still reason for concern at the risks and dangers which threaten young infants who are taken into hospital wards. At all times these risks and dangers have been greater for infants than for any other group of hospital patients. There is on record an account of an infants' "home" where at the beginning of the last century destitute babies were admitted for "care and feeding," and of these 90 per cent. died within the year of their admission. Later in the century Henoch revealed his feelings when, in writing of ward infections, he said: "Deficient and unsuitable feeding is not the only thing to be blamed in these cases . . . and finally the last stage develops which precludes all hope and leaves to the physician when he sees a number of such children together (as for example in my ward) only sadness and resignation." Quite recently a famous pædiatrician has written[1]:

> "the herding of infants in separate wards where the individualisation and mothering of the home are wanting, where exposure to infections of the respiratory tract leads to more institutional casualities than one can contemplate with serenity of mind and of heart is fraught with such danger that one often wonders if it were not better to abolish them altogether."

While admitting that such dangers do exist, I do not think for a moment we need advocate the closing of infant wards. Hospital treatment can be rendered as safe for the infant as for older patients. I know of one institution in which are housed 15 illegitimate children below the age of six months, and during the past five years there have been no serious ward infections and no deaths from infection. More than 300 infants have passed through it with a lower morbidity- and mortality-rate than obtained amongst infants in the general community. There are many hospitals into which infants can be taken with equal safety.

An appeal to hospital statistics will not provide a complete answer to a request for actual figures to support my argument. It often happens that when a mother learns that there is nothing more to be done for her infant, or when she recognises that her infant is extremely ill, she takes the child home. Another fallacy in hospital statistics arises because an infant may be in hospital for a few days receiving some simple surgical treatment and not show signs of ward infections until its return home. On the other hand, a children's hospital is often the repository of infants who have reached the last stage of some infectious illness incurred at home. The most satisfactory method of determining the effects of so-called hospitalism on infants would be to gather complete statistics of the illnesses and the death-rates of a large number of infants following or subsequent to their admission to the wards of hospitals in a state of good general health for the treatment of some simple structural fault such as hernia.

We can get some idea of what Simpson called the "morbific influences" of a hospital on infants if we examine the results of treatment of hypertrophic pyloric stenosis. In a recent correspondence[2] on the subject it was pointed out that the mortality of these infants treated in hospital was 25 per cent., "while in infants of the same age and weight, operated on privately by the same surgeons, the mortality was less than 1 per cent." It will be conceded that hospital patients are usually admitted in a more advanced stage of the disease than private patients, but that will account only for a small part of the disproportion between these results, and the main part must be laid at the door of infections which have been acquired either before or after admission to hospital. I knew surgeons of ripe experience who, in the days before adequate arrangements for hospital treatment existed for infants, preferred to send home those on whom they had operated for hernia and pyloric stenosis on the day of operation rather than admit them to hospital.

One of the reasons that the dire effects of infections in infants has received so little attention is that the signs and results of infection are often misunderstood. If a perfectly healthy infant is subjected to infection from a streptococcal tonsillitis in an adult the results are these: The child begins to refuse its feeds, is restless, has dyspeptic vomiting and diarrhœa. The temperature is variable and fever may be absent in some cases. The weight falls and for a period of 5 to 15 days the dyspeptic and bowel symptoms continue until recovery sets in. The illness may pass without any signs of localised inflammation in the fauces. If an undernourished infant is similarly infected there may be no rise in temperature, the digestive symptoms continue longer, and the child may pass into a condition diagnosed "marasmus." If further observation is continued, evidences of the latent but recurrent infection appear with intermittent bouts of pyuria and a tendency to attacks of otitis media, skin sepsis, or broncho-pneumonia. Too often, in my opinion, the mistake is made of looking on the primary fault in these infants as being due to "feeding disorder," and some mysterious inability to digest fat or carbohydrate or protein is invoked as a primary cause. It may be true that they cannot digest cream, but it is equally true that an adult with influenza dislikes beefsteaks. I would suggest that we gain a better understanding of the problem if we recognise how little of disease in infancy is due to "feeding disorders" and how much to infection.

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[1] Brenneman, J.: Amer. Jour. Dis. Child., 1930, xl., 1.

[2] Paterson, D.: THE LANCET, 1933, i., 719.

The commonest ward infections in infants are those due to septic organisms which produce a variety of results, and to dysenteric organisms which produce an infectious ileo-colitis. The younger and the smaller the infant the more serious and the more prolonged are the results. Many infections which are comparatively innocuous in children past the age of 12 months may be quickly fatal in young infants, especially if they be thin and underweight.

CONTROL OF INFECTIONS IN HOSPITAL WARDS

My observations lead me to the opinion that whereas isolated cases of infectious diseases will inevitably arise or be admitted to hospitals, the spread of these infections can be prevented or strictly limited by observing two principles: (1) the training of a competent staff capable of recognising the suspicious cases; (2) the building of hospitals and arranging of wards in such a manner as to prevent overcrowding. Personally I look forward to the day when these arrangements will provide in every hospital a single room for each patient if he wishes for it, if the nature of his illness demands it. If there must be wards, I think that the best and most effective planning is that which allows beds along one side only, the other being free with access to a balcony, in the manner of construction used at the Birmingham Children's Hospital.

The necessity for the observance of these two principles is of greater importance in hospitals dealing with sick infants than in any other type of institution. The susceptibility of infants is so great, the spread of infection in their wards so rapid, and the results so serious that it were better if each infant were placed in a separate ward. My own practice in the hospital treatment of babies is guided by five rules:

(1) Not to admit a baby into hospital unless (*a*) some form of technical treatment is to be given which cannot be provided at its home or as an out-patient, or (*b*) the home conditions in which the baby lives are injurious to it.

(2) If a baby is to be admitted to hospital for the treatment of a disorder of a non-infectious nature such as prematurity, pyloric stenosis, or congenital abnormality, it must be isolated in a room where it can be safeguarded from infection.

(3) Where infants or young children are put into wards they should be arranged: (*a*) according to the age-groups to which they belong, the infants under six months being warded together, those from 6 to 12 months together, and those over 12 months together; and (*b*) the wards must be small and with ample air space.

(4) To provide for the infants an amount of nursing and supervision which is not less than that which would be provided if they were left with parents or guardians at home, and in order to achieve this to admit the mother with her infant if necessary.

(5) To train the resident and nursing staff to the view that in all hospitals dealing with acute diseases there are "morbific influences" which are highly dangerous to young infants, especially if they be underweight, and that it is their duty to safeguard their patients from these dangers.

Finally, I prefer to allow parents to visit their young infants when in hospital. This is done to correct the belief, which I regard as erroneous, that ward infections in children's hospitals are brought in by the children's parents.

THE USE OF
X RAYS IN THE INVESTIGATION OF VARICOSE VEINS

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(WITH ILLUSTRATIVE PLATE)

X rays have been used extensively, both clinically and in the post-mortem room, in the investigation of varicose veins. Clinically, the earlier solutions employed to render the vein opaque to X rays, such as the inorganic iodide salts, were unsatisfactory because of their toxicity and local irritative effects. Lipiodol overcame some of these difficulties (Sicard and Forestier [1]), but as a fluid for injecting into veins has the disadvantages, first, that, being heavy and oily, its physical condition is so different from that of blood that it tends to break up into droplets, and, secondly, that it can only be injected in relatively small dosage. More recently Barber and Orley [2] have described and illustrated the use of the Uroselectan group of compounds for the same purpose. These compounds are almost ideal for injecting into veins to render them opaque to X rays, since they form watery solutions which mix readily with the blood, and which may be injected in quantities sufficient to fill even a large varicose venous system without causing general disturbance. A series of patients from the varicose vein clinic of the Middlesex Hospital was therefore investigated by this means and an attempt was made to assess its value, both in the study of varicose veins in general and in individual cases.

Twenty-three patients in all were investigated, the cases selected being chiefly those in which the internal saphenous system was principally involved. In most of them the varicose veins were extensive and large in size, but a few early cases also were included. Uroselectan B was used, the standard amount injected on one side being 20 c.cm. It was found that a dilution of the strength of the uroselectan, as supplied in the ampoule, to half its strength gave perfectly satisfactory X ray pictures, and in this way the expense of the investigation was diminished. Moreover, in cases in which it was desired to investigate formation soon attracted attention; this was the annular shadow. In its typical form this appears as a sharply defined, thin-walled ring; any part of the lung may be involved, but the subclavicular region is most commonly affected. If previous radiograms are available it will usually be found that it has appeared on the site of a much smaller infiltration. An annular shadow may reach a diameter of two inches or more within a few weeks, and it may disappear in an equally short time; reappearance, sometimes after a lapse of several months, is not exceptional.

The appearance and behaviour of annular shadows is so different from that which was expected of cavities that for a long time radiologists and physicians were unwilling to accept them as true cavities. Among the theories that have been put forward to account for these rapidly changing ring shadows the following have received the most serious consideration:—

1. The "pleural ring" theory has proved untenable, as post-mortem findings have shown that all or practically all annular shadows represent cavities.[1] Moreover a localised pneumothorax rarely gives rise to a ring shadow, and oblique X ray examination indicates that these shadows are intrapulmonary.

2. The "flat cavity" theory.—H. Alexander's suggestion [2] that rapid healing might be due to these cavities having a short antero-posterior diameter is not borne out by oblique and lateral radiograms, which show them to be spherical.

3. Bronkhorst's theory [3] assumes that the size of a cavity is not due to tissue destruction alone but also to alterations in the elastic tension in the surrounding tissues. As the inflammatory process diminishes the normal elasticity of the lung tissue is regained and the cavity becomes smaller. This theory is an ingenious one, but fails to account for an annular shadow in a lung compressed by pneumothorax as described by Sowerbutts.[4]

4. The cellular infiltration theory [5] regards annular shadows as a zone of demarcation, separating the inflamed but not yet necrotic tuberculous focus from the healthy lung. This theory offers a simple explanation for the sudden appearance, disappearance, and reappearance of annular shadows. A radiogram from Case 2 (Fig. III.) shows a small ring within a much larger one. The following film (Fig. IV.) shows a single ring intermediate in size, and these changes suggest that the inner ring may represent a cavity and the outer a zone of demarcation. This theory is also open to the objection that at autopsy cavities are almost always found to correspond with annular shadows.

5. The inflation theory.—There remains the theory that annular shadows are caused by air under pressure following partial obstruction of a smaller bronchial tube. The mechanism assumed by this explanation is similar to that involved in valvular pneumothorax and in the formation of emphysematous bullæ. Arnell [6] has described cases of asthma with annular shadows of emphysematous origin. More recently Doub [7] has reported on five non-tuberculous cases with large annular shadows which proved at autopsy to be emphysematous bullæ. In three of these cases the condition was caused by bronchial stenosis due to neoplasm, an observation which supports the view that similar conditions play a part in the formation of tuberculous cavities. Annular shadows due to bullæ are still more thin-walled than those of tuberculous origin; it is therefore probable that in the latter condition caseation is present in the wall of the cavity at an early date.

Hübschmann [8] has shown that widespread emphysema may result from an acute tuberculous infection; he records a case of miliary caseous pneumonia, in which the lung on section looked like a sponge on account of numerous small bullæ. Vere Pearson [9] added a further link in the chain of evidence when he found a positive pressure on the introduction of a pneumothorax needle into a large thick-walled cavity; after removal of air this was reduced to atmospheric, but became positive again when the patient breathed deeply, thus proving the presence of a valvular opening. Although this case behaved like one of valvular pneumothorax this condition was not present, the growth of the cavity having been followed radiologically during a number of years.

Gloyne [10] has recently shown, by microscopical sections of the walls of minute early cavities, that surrounding alveoli are compressed as they would be if the cavity contained air under pressure.

The absence of auscultatory signs of cavitation, which has been used as evidence against annular shadows being true cavities, gives further support to the view that a valvular mechanism is at work.

From the above it appears that some tuberculous cavities contain air under pressure; that this is a common occurrence is suggested by the spherical shape of the great majority of these early thin-walled cavities. Both the formation of emphysematous bullæ and of valvular pneumothorax provide analogies which show the facility with which air accumulates in the chest, as a partial obstruction interferes much more with expiration than with inspiration. The lumen of a bronchus in any case becomes smaller during expiration, and the presence of tenacious sputum will tend to produce a valve.

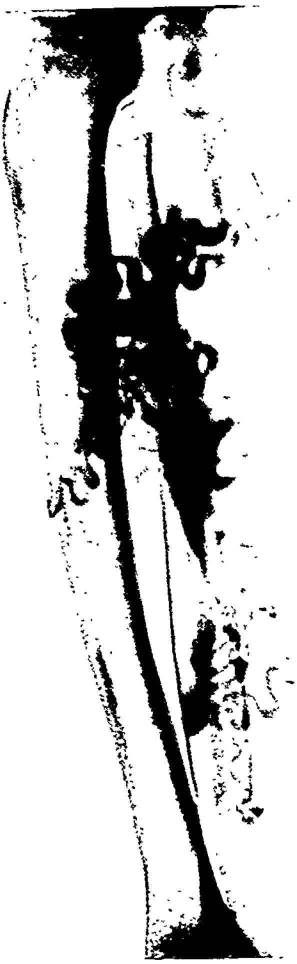
The film shown on Fig. V. (Case 3) suggests another possibility of valvular action. Although this patient had a large cavity with fluid level, no abnormal physical signs could be detected and there was no cough or sputum until an expectorant mixture was given; this resulted in the production of a small amount of positive sputum. After phrenic evulsion and many months of rest in bed the cavity disappeared leaving quite a small scar (Fig. VI.). In this case, which is by no means unique, it is difficult to explain the fluid level in the cavity together with the absence of sputum if the outlet had been patent. The small scar left on healing increases the probability that this cavity was not due entirely to destruction of tissue and that inflation was also present. This and similar cases suggest that secretion in a cavity may act as a valve if the draining bronchus enters below the level of the fluid. Air could easily enter the cavity by bubbling through the fluid, but it would be difficult for tenacious sputum to escape through a narrow opening.

A fourth patient arrived at the sanatorium with an annular shadow at the left apex, fever, and positive sputum (Fig. VII.). Pneumothorax failed, but after several months of rest, combined with gold treatment, the cavity disappeared leaving a small scar (Fig. VIII.); the temperature was normal and the sputum ceased. The patient returned home but relapsed six months later; fever and sputum returned, and the annular shadow reappeared (Fig. IX.).

The clinical course of this case cannot easily be explained by the old theory in which cavity-formation was looked on as being due to destruction of lung tissue alone. Probably inflation together with a more circumscribed destructive lesion are involved.

MR. PATEY, MR. TATHAM, AND DR. NICHOLAS: RADIOGRAPHY OF VARICOSE VEINS

I



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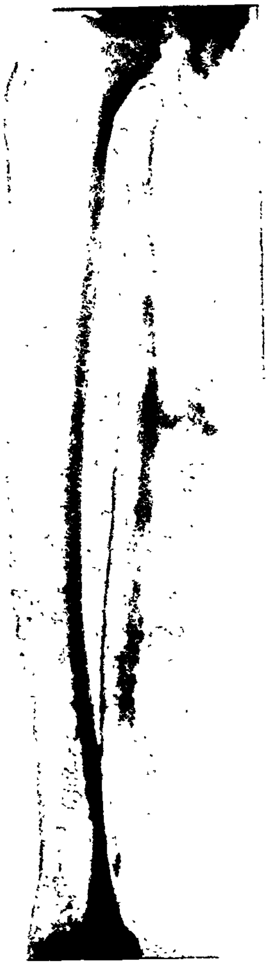

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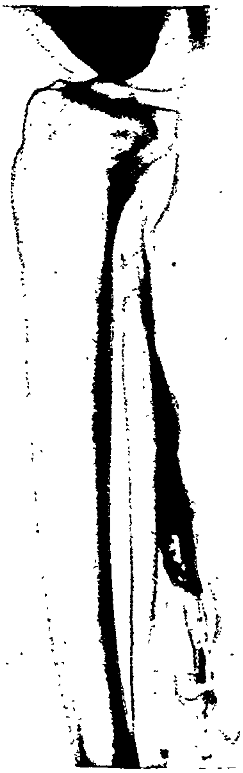

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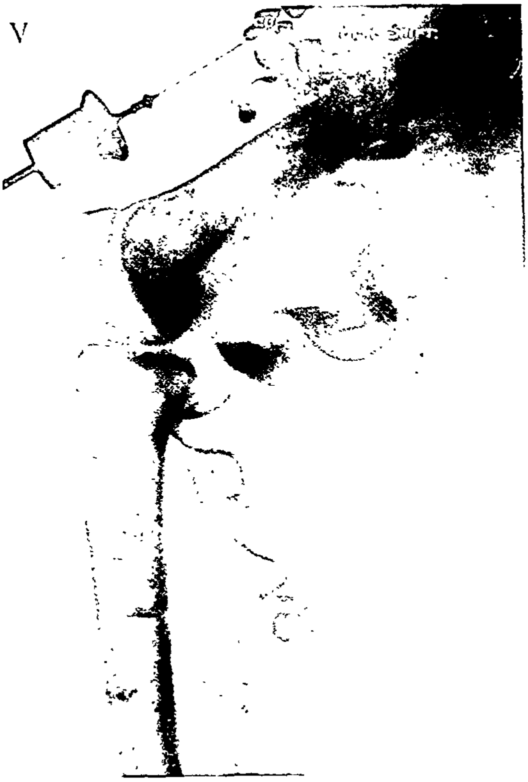


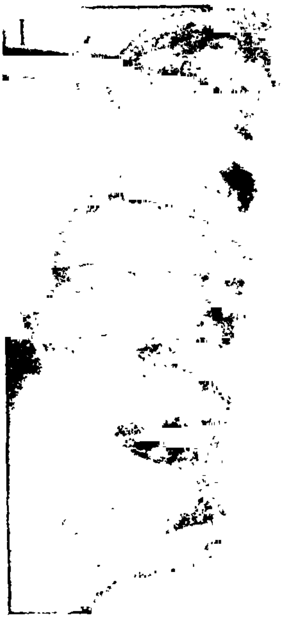
FIG. I.—Injection into the internal saphenous vein in the thigh. Patient in the standing position.

FIG. II.—Same case, after exercise of limb. Solution still present in larger veins. Smaller veins now visible.

FIG. III.—Early clinical case. Marked valvular incompetence.

FIG. IV.—Same case as Figs. I. and II. Injection at the ankle in the lying position. Superficial varicose system incompletely filled. Popliteal and femoral veins clearly shown.

FIG. V.—Advanced case, injected standing. Stagnation and varicose pouches.



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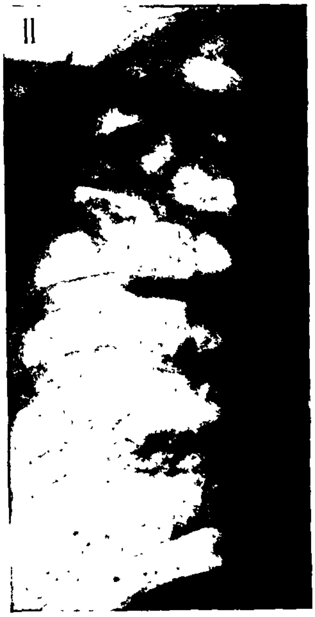

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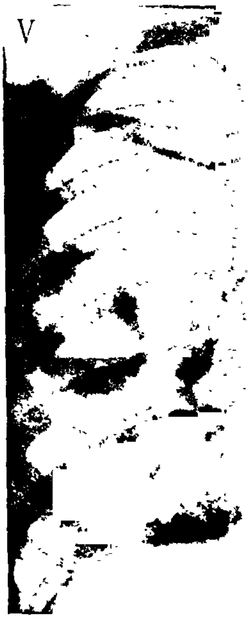

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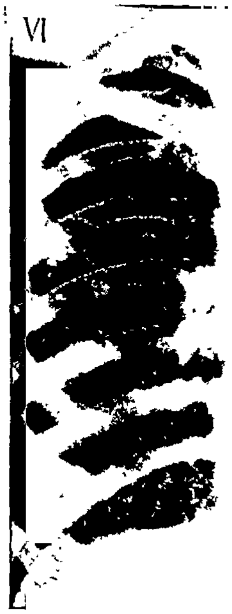

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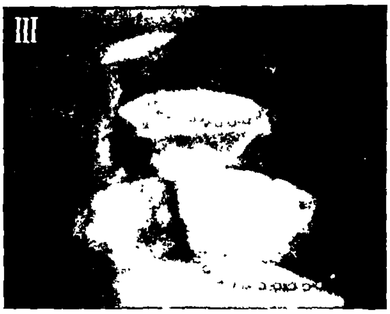

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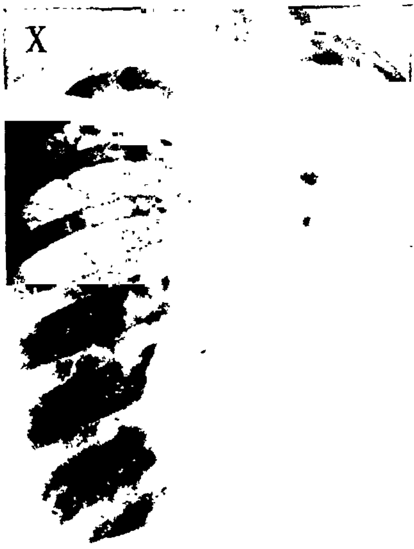

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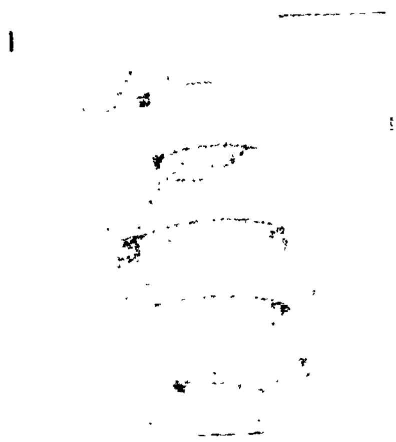

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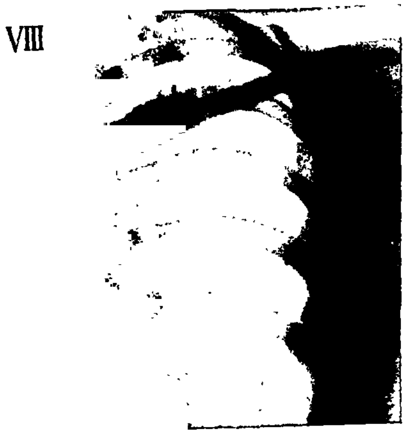

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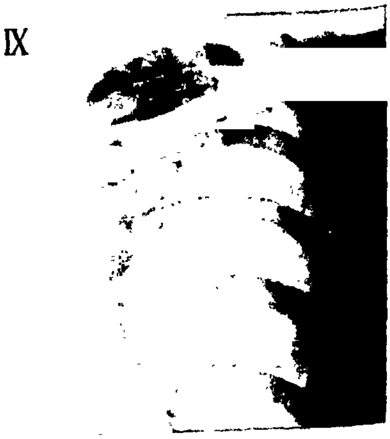

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THE NOMENCLATURE OF CAVITIES

It appears from the above that two factors are concerned in cavity-formation—destruction and inflation. Whereas purely destructive cavities are common, especially in the substance of large pneumonic patches of disease, it is doubtful if inflation alone is ever the cause of the annular shadows seen in phthisis. Certainly the earliest cavities examined microscopically show evidence of caseation, and in radiological appearance thin-walled cavities have a more definite outline than the non-tuberculous bullæ resulting from bronchial stenosis. As destruction of lung tissue has for so long been the only factor recognised, cavities formed in this way are commonly called "ordinary" or "true" cavities. The radiological study of early cavity-formation shows that annular shapes unassociated with large patches of infiltration are at least as common as purely destructive lesions. "Destructive cavity" therefore appears to be a better name.

DESCRIPTIONS OF ILLUSTRATIONS ON SPECIAL PLATE

FIG. I.—Tuberculous infiltration at right apex.

FIG. II.—Later radiogram from same case, showing early stage of cavity-formation.

FIG. III.—Radiogram of left apex showing a small ring within a larger one (their lower margins are indicated by the dotted lines). The inner ring may represent a cavity and the outer a zone of demarcation.

FIG. IV.—Same case. There is now a single ring intermediate in size.

FIG. V.—Large cavity in the right lung.

FIG. VI.—Same case, after phrenic evulsion and prolonged rest. The cavity has disappeared, leaving a small scar.

FIG. VII.—Annular shadow at left apex.

FIG. VIII.—Same case. Cavity has disappeared under treatment, leaving only a small scar.

FIG. IX.—Same case. After six months at home the patient is again febrile and the annular shadow has reappeared.

FIG. X.—Typical annular shadow in right lung. Left lung more severely affected.

FIG. XI.—Same case. The disease in the left lung has been arrested, but the annular shadow has become a chronic cavity.

The thin-walled spherical cavities in which inflation seems to play an important part have been described as "air cysts," but this term is not a good one for a lesion which is probably in part destructive. Other names such as "silent cavities" and "X ray cavities" have been suggested, but I think the most appropriate term to be "round cavity." This name was made use of by Pinner,[11] although he looked on the thin wall with little exudative tissue in its surroundings as evidence of incipient defence and not of inflation.

Chronic cavities differ from the two types of early cavity in having thick fibrous walls, and "fibrotic cavity" seems to be the best name for them.

THE SYMPTOMS, SIGNS, AND TREATMENT OF CAVITIES

Destructive cavities.—The formation of this type of cavity indicates a condition of high allergy with poor defence; toxic symptoms are therefore prominent. The onset of excavation is usually accompanied by a sharp rise in temperature, which often settles almost but not quite to normal in a few days. Sputum commonly appears or increases about the same time. When a large mass of consolidated lung tissue is excavated stethoscopic signs of cavitation may appear within a few weeks, but in most cases there is little or no change in the physical signs, and the diagnosis is radiological.

The presence of a severe type of lesion and the fact that destructive cavities usually fail to heal constitute an indication for active treatment. In addition therefore to strict rest, which should be continued for several weeks after the temperature has become normal, these cases urgently demand collapse treatment, which should not be delayed if there is no contra-indication. If pneumothorax fails phrenic evulsion should be proceeded with, but thoracoplasty is best postponed for several months so that the lesion may become more fibrotic; in suitable cases gold treatment may hasten this process.

Round cavities.—Annular shadows are often found as isolated lesions in cases in which there is no obvious disturbance in health, but if the patient is under close observation at the time the cavity appears some increase in pulse-rate and temperature will be seen, and there is usually loss of weight and increase of sputum. Bronkhorst[3] has noted that variations in the size of a round cavity almost always correspond with tubercle bacilli and elastic fibres becoming more or less plentiful. The majority of round cavities disappear with conservative treatment, but as the radiograms of Case 5 show, an annular shadow may turn into a chronic cavity. In the first of these, Fig. X., a typical round cavity has appeared in the better lung of a patient treated by artificial pneumothorax. Two and three-quarter years later the disease in the worse lung is arrested, but the annular shadow is still present and there is evidence of fibrosis. Two more annular shadows have also appeared, and the patient is febrile and has several ounces of sputum containing tubercle bacilli.

Various opinions have been expressed as to the correct treatment of these lesions. In 1921 Barlow and Thompson[12] stated that a patient should not even be told he has phthisis on the evidence of an annular shadow. At the same time they admitted that 82 per cent. of patients with these "pleural rings" relapsed and required further treatment. In 1924 Dunham and Norton[13] expressed the opposite view that these lesions are evidence of a severe type of disease and demand immediate collapse of the affected lung. Burrell[14] holds an intermediate view and emphasises the importance of considering the degree of activity present and the amount of disease in the rest of the lung. He records an interesting case in which a lung containing an annular shadow was collapsed by artificial pneumothorax. The treatment had to be stopped after the second refill, but the cavity did not return.

In general, round cavities are associated with a less active and progressive form of the disease than destructive ones, but they are not often found in the more benign types of apical and productive disease, and their occurrence indicates that there is some degree of activity in the lesion.

As so many round cavities disappear spontaneously, expectant treatment is the most rational. Toxic symptoms, although not obvious, are rarely absent and the patient should be kept in bed for several weeks at least. After a month or six weeks a further X ray examination should be made. If the symptoms have disappeared and the cavity is smaller artificial pneumothorax is unlikely to be required. If symptoms are still present and the cavity is larger, artificial pneumothorax is indicated. In doubtful cases a further period of rest and observation is best, but if there is no definite improvement after three or four months, collapse treatment should not be further delayed. A round cavity with little surrounding infiltration does not need to be collapsed for the customary three to four years; eighteen months to two years will probably be well on the safe side. When artificial pneumothorax fails phrenic evulsion is often advisable, and thoracoplasty may be needed in cases of persistent or recurrent round cavity in which there are toxic symptoms (e.g., Case 5).

Fibrotic cavities.—The symptoms found with this type of cavity are variable, occasionally there are none, the cavity being dry and the general health good. In other cases there is much sputum, fever, and progressive emaciation. It is in this type that classical signs of cavitation are to be found.

As Burrell[14] has pointed out, the treatment of fibrotic cavities should be guided by symptoms; it is meddlesome to attempt to collapse symptomless dry cavities. When much sputum, hæmoptysis, or toxic symptoms are present collapse treatment is indicated. Although fibrotic cavities are often adherent to the chest wall pneumothorax should be tried first as it sometimes succeeds in unpromising cases. When ineffective on account of adhesions which cannot be cauterised, phrenic evulsion followed by thoracoplasty should be carried out in suitable cases. Phrenic evulsion alone rarely gives good results in cavities with dense fibrotic walls, and in apical cavities the upward movement of the diaphragm by altering the shape of a thick-walled cavity may result, in rare cases, in hæmoptysis or increased activity.[15] If a cavity has given rise to fresh dissemination of disease by aspiration, therapeutic measures must deal with this condition first and the direct treatment of the cavity has to be postponed until the recent disease shows evidence of commencing fibrosis.

SUMMARY

1. The great majority of annular shadows represent intrapulmonary round cavities, which are characterised by their rapid appearance, their frequent disappearance, and their occasional reappearance. (2) In cavity-formation two factors are probably at work—destruction and inflation. In round cavities the inflation element predominates, but when these lesions first appear symptoms are usually present, and these tend to increase or decrease pari passu with the size of the cavity. (3) Round cavities may persist and change into the chronic fibrotic type. (4) The formation of destructive cavities means that a severe type of disease is present and collapse treatment should be applied if possible. (5) Round cavities demand expectant treatment. A period of rest should be followed by further X ray examination. A large proportion of round cavities disappear with rest but others persist, giving rise to symptoms, and are best treated by artificial pneumothorax.

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NUTRITIVE VALUE OF BOILED AND RAW MILK IN INFANT FEEDING

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STANLEY GRAHAM, M.D. Toronto, F.R.F.P.S. Glasg.
VISITING PHYSICIAN TO THE HOSPITAL; UNIVERSITY LECTURER IN THE MEDICAL DISEASES OF CHILDHOOD

THE relative nutritive values of raw and sterilised milk have received much consideration of late years. In the literature which has recently been summarised by Stirling and Blackwood[1] and by Savage[2] it is clear that although definite statements are made about the absorption of the various food constituents, there are but few exact data regarding the influence of sterilisation on the nutritive value of milk for the infant. It therefore seems worth while to put the following results on record.

Two apparently healthy infants, aged 8 months and 7 months, were fed on an adequate measured amount of boiled cow's milk for 10 to 14 days, on the last seven of which the excreta were collected. Thereafter the same amounts of raw milk obtained from the same source were given for a fortnight, the excreta as before being collected on the last seven days. Aliquot samples of the milk were collected for analysis each day during the metabolism periods. The intake and output of nitrogen, fat, calcium, and phosphorus in each of the seven-day periods were then determined and the retention of each calculated.

—	Diet.*	Retention per kg. per day.				Gain in weight.
		Nitrogen.	CaO	P_2O_5	Fat.	
Case 1.		(g.)	(g.)	(g.)	(g.)	(g.)
Period 1.	(Boiled).	0·162	0·060	0·0575	3·8	150
Period 2.	(Unboiled).	0·071	0·041	0·0410	3·85	140
Case 2.						
Period 1.	(Boiled).	0·194	0·0003	–0·0098	3·75	100
Period 2.	(Unboiled).	0·125	–0·009	–0·090	3·70	250

* In all the experiments the diet consisted of 200 c.cm. milk, plus 4 g. cane sugar, five times daily.

The results recorded in the accompanying Table show lower retentions of nitrogen, calcium, and phosphorus during the raw milk period than during the period when boiled milk was given. It is of interest that while Case 1 was retaining a large amount of mineral during both periods the retention in Case 2 was practically nil. Nevertheless even in Case 2 the substitution of raw for boiled milk over a period of a fortnight did not improve the mineral retention as one might have expected, if it is true that raw milk possesses a superior nutritive value. In passing, one might remark that this metabolic picture is that presented by the early stages of rickets in infants. The retention of fat was almost the same in the two types of feeding.

We do not wish to infer too much from these results, since the scope of these experiments is too limited to allow one to affirm that sterilised milk is always superior to raw milk as far as retention of nitrogen and minerals is concerned. *It is also to be remembered* that the experiments recorded here were of short duration, and do not reflect the state of affairs which might exist on the continued administration of boiled or raw milk. Nevertheless they afford no evidence that the absorption c[illegible] substances, fat, and minerals is diminish[illegible]

Stirling and Blackwood[1] come to the conclusion that there is no decisive evidence that pasteurisation destroys the vitamin content of milk to any appreciable extent, with the exception of the vitamin C. This is not a serious drawback, since it is almost universally admitted that raw milk does not provide a sufficient supply of vitamins, and that these must be obtained in other ways.

As far as these results go there is no evidence to support the idea that the boiling of milk interferes with its usefulness as a food for infants.

We desire to express our thanks to the Medical Research Council, by whom the expenses of this work were defrayed.

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Clinical and Laboratory Notes

EXCISION OF THE THORACIC ŒSOPHAGUS FOR CARCINOMA

WITH CONSTRUCTION OF AN EXTRA-THORACIC GULLET

By George Grey Turner, M.S. Durh., F.R.C.S. Eng.

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The patient was a man 58 years of age, one of the best type of North country miners, who was always bright and cheerful, and anxious to coöperate in every way with those in charge of his case. He gave a history of difficulty in swallowing of only eight weeks' duration. His complaint was that solid food appeared to stick at the lower end of the breast bone, and that he could only manage to swallow foods of the consistency of porridge and well-masticated bread. After treatment from his own doctor he improved a little, but the disability was really progressive, for during the eight weeks he had lost no less than 3 st. in weight. There were no external physical signs whatever, but the X ray appearances were characteristic of a constricting neoplasm of the middle of the œsophagus (Fig. 1).

FIG. 2.—Patient enjoying a high tea some seven months after the excision of his œsophagus.

On April 5th of this year (1933) gastrostomy was carried out, and at the same time it was determined that there were no secondary deposits in the liver or in the glands along the lesser curvature of the stomach. The man commenced to pick up immediately. After careful consideration I determined to attempt to carry out the operation for the removal of the thoracic œsophagus by the pull-through method which I described in my Henry Jacob Bigelow lecture.[1]

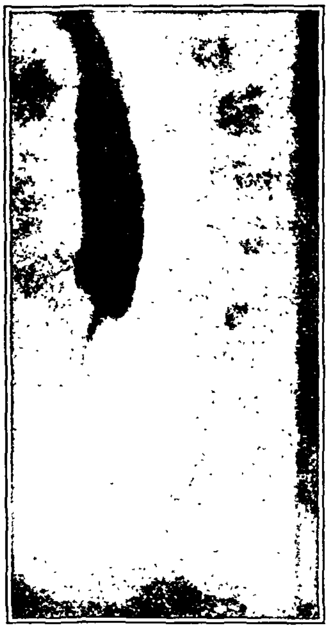

FIG. 1.—Radiogram showing constricting neoplasm in middle of œsophagus.

On Friday, April 28th, under general anæsthesia, the abdomen was opened by a high median incision. The left lobe of the liver was separated from the diaphragm and the abdominal œsophagus exposed. About 10 c.cm. of a ½ per cent. solution of novocain was injected through the hiatus into the œsophageal tunnel in the hope of displacing the pleura out of harm's way. The peritoneum in the neighbourhood of the hiatus having been incised, the finger was inserted into the posterior mediastinum and enucleation of the œsophagus commenced. I found that I could carry my finger all round the growth, but I could not get above it. Having accomplished as much as possible by this route the venue was changed to the neck. The cervical œsophagus was exposed through a transverse incision dividing the sternomastoid. By working downwards with the finger in the cellular tissue I was able to reach the upper limit of the growth and to separate the œsophagus from its connexions down to that point. The gullet was then ligatured and divided low in the neck and the upper end was brought to the surface through an independent button-hole incision to the margins of which it was carefully fixed. The division of the œsophagus was made with the cautery and its cut end and the upper part of the tunnel were well smeared with Bipp. The ligatured end was allowed to retract into the mediastinum and the neck wound was carefully closed. A return was now made to the abdomen but on drawing on the œsophagus it was found to be still firmly attached. With the fingers working in the posterior mediastinum it was eventually completely loosened, the left vagus nerve being divided with the scissors low down while the right nerve was not seen though it may have been torn through. At this stage it was clear that a hole had been torn into the right pleura and that air was rushing very freely into the chest cavity. This was arrested by stitching the left lobe of the liver over the œsophageal hiatus like a lid. The œsophagus was then ligatured at the cardia and cut away, the stump being carefully buried in the stomach by a series of purse-string sutures. The patient made a very good recovery from this operation and without any unusual disturbance. After four weeks he was ready to go home to complete convalescence.

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[1] New England Journal of Medicine, 1931, ccv., 657, 674.

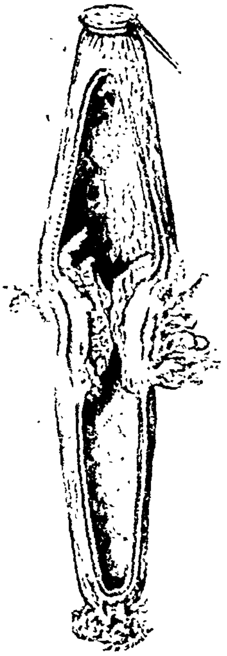
FIG. 3.—Showing comparatively localised growth in excised œsophagus.

On June 20th he returned to hospital and on the 28th I carried out the first stage of the operation for the construction of an antethoracic œsophagus. This was carried out by making a tube from the skin of the front of the chest for the middle portion after the plan devised by Rovsing of Copenhagen. The lower end was completed by the Tarvel method, using an isolated portion of jejunum for the purpose. The orifice of the upper end of the œsophagus at the root of the neck was connected with the skin tube by a further skin plastic operation. During convalescence the patient developed a fistula at the junction of the skin tube with the intestine, and this required two operations for its repair. On the 206th day after the excision of the œsophagus the patient ate a meal consisting of three slices of bread and butter with a poached egg, half a pint of tea, and two pears (Fig. 2). This he enjoyed thoroughly and in his own words "he was able to swallow it just as well as ordinary." The specimen (Fig. 3) is a beautiful example of a comparatively localised squamous-celled carcinoma, and though it has invaded the muscular wall, there is no evidence of extension beyond.

Of course it is obviously far too soon to judge of the result from the point of view of the treatment of malignant disease, but this case at least shows that the operation which I have for so long had in mind can be carried to a successful issue and it does demonstrate the great value of the plastic construction of a new gullet outside the chest.

PROLAPSE OF THE ABDOMINAL CONTENTS THROUGH A STAB-WOUND

By I. E. Revelle, M.D. Queen's Univ., Ontario
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The patient, a powerfully built Chinese soldier, aged 20, was seen first as an out-patient on Feb. 17th last, five days after he had been stabbed in the abdomen by bandits in the countryside near here. There was a large mass covered with omentum protruding from a horizontal wound about five inches long, and about an inch above the navel. It required most of one's two hands to enclose it, and perhaps weighed over a pound. It was very foul with superficial pus, and blackened in places.

Next day he entered hospital. During the first few days in hospital he spat up a good deal of bloody pus, and there had been absolute constipation since the accident; but otherwise his condition seemed good—pulse-rate 80, temperature slightly up, 37·6° F.—so that operation was delayed till the purulent condition of the mass might be cleaned up. An enema on the second day produced slight results and on the fourth day he had a small natural movement.

In the meantime the protruding mass, which was treated with bichloride, Mercurochrome, and eusol dressings, was receding and becoming firmer. It bled easily but was not very sensitive. Nine days after admission he was taken to the operating-room, but as pus began to well up from the top edge of the wound, apparently coming from a pocket under the skin to the right side of the wound, nothing was done beyond tearing off a tag of tissue with the fingers and sealing up the bleeding arteries with a hot soldering iron.

In bed again on the flat of his back, the pus pocket soon cleared up, while the mass continued to get smaller. The same dressings were continued, with occasional touches of half-strength acetic acid and the copper sulphate stick. New skin had begun to grow in from the edges, commencing first at the ends of the wound. After three weeks in hospital the mass was flush with the surface, and by the end of a month he was walking about the wards. After two months the wound had entirely healed over.

The patient has been seen several times since leaving hospital, with no complaints. The scar is four inches long and half an inch wide, purplish-brown in colour, and somewhat harder than the abdominal wall. There is no tenderness on pressure.

UNUSUAL OCCURRENCE IN A GASTROSTOMY

By A. R. Whitlow, M.B. Lond.
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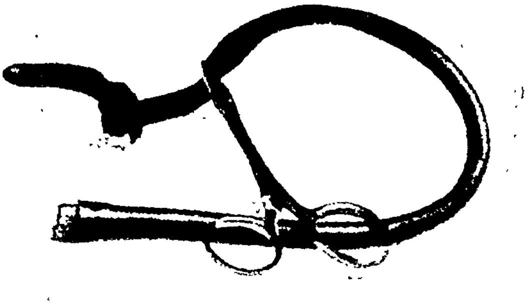
An elderly man attended hospital on account of inability to remove his gastrostomy tube. He had had a permanent gastrostomy made some ten years previously and had been in the habit of changing the tube about once a week. Attempts at removal proving unsuccessful, the hole in the abdominal parietes was enlarged under local anæsthesia, and the tube, a No. 12 E red rubber catheter, in good condition, was found on extraction to have one complete knot tied in it. The knot was partially divided in the depths of the wound, and the cut edges have since been loosely approximated with a stitch for purpose of the photograph.


The gastrostomy tube showing the knot.

I can only conclude that the gastric peristaltic movements had "tied" the knot, which was then drawn tight by attempts to pull out the tube, since to introduce it knotted would have been quite impossible.

I am indebted to Dr. F. Campbell, who sent the case to hospital, for permission to publish this note.

MEDICAL SOCIETIES

MEDICAL SOCIETY OF LONDON

AT a meeting of this society held on Nov. 27th, Sir WILLIAM WILLCOX occupied the chair in the absence of the president, Sir JOHN THOMSON-WALKER, and a discussion on

Ward and Dormitory Infections

(excluding the common exanthemata) was opened by Dr. J. ALISON GLOVER. As he dealt with dormitory infection last year at the Royal Society of Medicine and recently at King's College Hospital,[1] he would, he said, on the present occasion speak only of ward infection. The diseases in which ward infection had been reported in recent years could be divided into two main categories: the contagion group and the droplet infection group. Some diseases (e.g., puerperal fever) obviously belonged to both groups and probably most of the droplet infection group could also be conveyed by direct contagion, as by means of table-ware. Examples of the first group were enteric fever, infantile diarrhœa, pemphigus neonatorum, breast abscess, and vulvo-vaginitis. The second contained pneumonia, influenza, and those diseases due to the hæmolytic streptococcus, such as puerperal fever, surgical scarlet fever, rheumatic fever, otitis media, streptococcal pneumonia, and on occasion even septicæmia. He knew of two instances in this country of ward infection of cerebrospinal fever. Of the contagion group, enteric fever was a typical example, and, despite its low incidence in recent years, ward infection due to it had been seen not infrequently. In his annual report for 1931 Sir George Newman referred to four hospital outbreaks in the last few years due to it, involving 60 patients who were under treatment for some other condition, the outbreak having been started by the admission of an undetected case, or of a patient suffering from a surgical condition whose nature was not suspected. With the skill now demanded in public institutions such instances, Sir George said, ought not to occur.

The most usual causal factors in these ward infections of enteric fever were, in Dr. Glover's view, mainly delayed or mistaken diagnosis, defective nursing technique, insufficient or faulty equipment, and overcrowding, whilst a staff carrier might be an important factor. He described the four outbreaks and related at length one in which the infection started with the admission of a boy into a children's ward with broncho-pneumonia and an abdominal condition suggestive of tuberculous enteritis. Fifteen days later, however, his blood was found to be positive to paratyphoid B. Eight other children, a nurse, and a ward-maid in the same ward were infected and the ward-maid, who was engaged in washing dishes and other articles used by the patients, infected a child in the ward above. All the five main factors were present in this case. Mistaken diagnoses responsible for other outbreaks included appendicitis, cholecystitis, and diarrhœa. Dr. Vernon Shaw had shown that the incubation period of paratyphoid fever might be as short as nine days, the onset might be sudden, there might be sore-throat, and a scarlatinal eruption, though this was not positive to the Schultz-Charlton blanching test. The abdominal pain in this disease might be severe enough to lead to appendectomy. In one hospital a series of six cases were operated upon before the correct diagnosis of paratyphoid was made. An instance where two children from the same household were both operated upon for acute appendicitis and gave rise to a ward outbreak of four other cases was detailed. One disastrous outbreak last year was traceable to insufficient sanitary equipment. In this institution three wards in one block contained, together, 30 beds, and there was but one w.c., which had to serve ambulant patients and staff and for the washing of bed-pans. A small ward kitchen and sink, too, were common to all three wards. From one of the wards access to the w.c. was through this kitchen. Here eight patients and four nurses contracted typhoid fever, and one of the nurses died.

Ward infection in lying-in hospitals causing morbidity in the newly born, often accompanied by outbreaks of diarrhœa in adult patients and members of staff, was still seen. The nursing technique of a lying-in ward was peculiarly exacting, and as the pupils in training often far outnumbered the trained obstetric staff, its maintenance was obviously difficult. Here especially skilled planning and good design were needed for every detail of equipment for the toilet of mothers, the toilet and bathing of infants, and the disposal, laundry, and sterilisation of napkins, bed-pans. Also, isolation accommodation must be adequate, and promptly used should occasion arise. Dr. Glover showed on the screen the plan of one of three wards of a lying-in hospital in which such an epidemic had occurred; each bed, with cot, had only 84 sq. ft. of floor space: the minimum floor space laid down by the Local Government Board in 1913 and by the Ministry of Health in 1920 for lying-in wards was 96 sq. ft. per bed. A case of ward infection due to pemphigus neonatorum occurred recently in the maternity department of a general hospital, the ward containing five beds. The outbreak affected the infants of all five patients in rapid succession, eight days only elapsing between the onsets of the first and last cases. In another instance 25 cases occurred in a lying-in hospital of 70 beds in seven weeks. This epidemic followed a period of exceptional pressure on beds, the confinements in the two previous weeks having been 26 and 43 per cent. respectively above the normal. Moreover, the floor space was about 12 per cent. below the minimum required by the Ministry. The experience usually was that an outbreak of pemphigus or other septic infection in either infants or mothers in a maternity hospital was preceded by overcrowding, with the accompanying tendency to a relaxation of attention to essential details of technique. Dr. Glover said that no case of septic infection in mothers or infants, however slight, should be retained in a ward; isolation should be carried out, with special nursing and complete sterilisation of all possibly infected material. Further, a complete medical examination of the staff should be undertaken, to avoid the carrying of infection from a hitherto unrecognised focus—throat or finger. He spoke of a case in which patients with the following diseases were in one ward: antenatal cases, a case of Cæsarean section, cases of normal delivery, of syphilitic pregnant women, of incomplete abortion, of puerperal sepsis, and of other gynæcological diseases.

The danger of ward infection from herpes was not yet sufficiently recognised; this could be carried either by direct contact or by droplet infection. The resultant disease was chicken-pox. He showed the bed chart, prepared by Dr. L. S. Fry, of a ward in a children's sanatorium in which a child with severe herpes zoster infected all the nine other children in the ward, who had not had a previous attack, with chicken-pox. At this institution child visitors were not allowed, and it was not known that any adult with chicken-pox had visited the hospital during previous weeks. In another instance in the same ward a nurse had herpes of the supra-orbital nerve, and several cases of chicken-pox occurred in the ward two or three weeks later. Droplet infection generally indicated overcrowding of beds but was often associated at the same time with infection conveyed by direct contact, by an ambulant carrier, or by a thermometer, catheter, or table-ware. It was well known that some strains of pneumococci were especially virulent, but cases of ward infection had occurred in which this excuse did not hold. Some years ago Dr. Glover investigated an epidemic of influenza in a public school, in which many cases were complicated by the type I. pneumococcus. Half the cases of pneumonia were probably infected in the dormitories (which were rather overcrowded) before admission, but at least half were cases of influenza on admission, and the pneumococcal infection was probably contracted in the sanatorium wards, some of which were not cross-ventilated and all were overcrowded, the floor space being 58 sq. ft., and the inter-bed space varying from 2 ft. 8 in. to as little as 1 ft. 3 in.

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[1] See THE LANCET, Dec. 2nd, p. 1275.

Turning to streptococcal infections, Dr. Glover said that the introduction of an epidemic strain of streptococcus afforded an acid test of hospital efficiency. Its spread might be facilitated by influenza or by epidemic coryza, but such spread, he contended, revealed a chink in the armour. In a recent epidemic of hæmolytic streptococcal infection in a large general hospital, there were 18 cases of scarlet fever among the staff, 18 among the patients, 34 cases of tonsillitis in staff and 21 in patients, 3 cases of empyema, 1 case of otitis, 2 of nephritis, and 1 of bronchopneumonia. It was clear from the investigation that two-thirds of the cases were due to Type IV. scarlatinal streptococcus. Here all the usual channels of infection seemed to be present, and in one ward table-ware transmission seemed possible as a defective overflow pipe rendered it impossible to heat the sink used for the washing of table-ware to the proper temperature for disinfection. It was seldom for surgical scarlet fever to spread in hospital nowadays, but akin to this were ward outbreaks reported by F. A. Belam this year. One occurred in a general hospital, where a puerperal fever patient gave rise to eight cases of scarlet fever. There were also two other cases, in each of which a puerperal fever case caused four scarlet fever cases. Last year, in a south of England hospital, the reverse took place —i.e., scarlet fever gave rise to several cases of puerperal fever.

Otitis media must be regarded as an infectious disease though it is usually a secondary infection. Some epidemics of otitis had been characterised by a very high proportion of mastoid cases. One danger in large epidemics of measles or influenza in school sanatoria was due to the fact that emergency nurses had to be called in, and if one of them happened to have just been nursing a streptococcal case she might easily be a temporary carrier of a virulent strain. The work of Griffith, Gunn, and Allison had proved, by serological methods, that patients in fever hospital wards could be repeatedly reinfected with different serological types of hæmolytic streptococci, and that many of the so-called complications of scarlet fever were really due to fresh infections occurring in the ward with a strain of hæmolytic streptococcus of different serological type from that which was present in the patient's throat on admission and which had been responsible for his initial scarlatina. Several outbreaks of recurrences of acute rheumatism following ward epidemics of throat infection with hæmolytic streptococcus had occurred at various hospitals. Touching on recovery wards, Dr. Glover said it was a most desirable feature of modern practice to take children into hospital after tonsillectomy, and retain them for several nights, and it was essential that the beds in these recovery wards should be well-spaced, and that the wards should be efficiently cross-ventilated. Otherwise infection might occur.

The urgent need for economy had resulted in proposals to curtail the minimum floor and bed space in institutions, but the Ministry had insisted on its minima being observed. Lessening the floor space and inter-bed space was the worst conceivable form of economy in hospital construction, for not only did it effect an extremely small diminution in the relative capital cost of the whole hospital but the risk of ward infections was greatly increased, and the convenience of nursing, the amenities of patient life, and the chance of rapid convalescence and speedy discharge of the patients were all imperilled by any interference with the efficiency of space and ventilation. Any decrease from the minimum standard of 8 ft. wall space for acute non-infectious hospital cases, or 12 ft. for infectious diseases, was to be regarded as a retrograde step.

Perhaps the work of Watt and Gauvain showed a yet more excellent way for the prevention of ward infection. Watt suggested that with certain exceptions, such as patients with surgical shock and very old and feeble patients, something approaching sanatorium conditions would be to the advantage of the great majority of hospital patients. But in large wards the ventilation was necessarily a compromise determined by the weakest. The treatment most suitable to the needs of the individual could best be secured by providing a higher proportion of accommodation in small wards, in which selective treatment would become possible. Gauvain had suggested that the time has come when open-air principles might be usefully applied to other types of hospital. "Pink eye" (infective conjunctivitis) was another annoyance, and it was difficult to secure the cases early enough because they would not report. When they did it could generally be cured in a fortnight. Impetigo was another source of trouble; covering with an antiseptic dressing for five days was as a rule sufficient. Pityriasis rosea was sometimes met with, but not generally until it had spread over the body. To deal with any of these infections the staff had to be always on the look out for their earliest symptoms.

Dr. J. C. Spence followed with the paper which is printed at length on p. 1306 of this issue.

Dr. E. Kaye Le Fleming spoke as medical officer of a public school, which, he said, was the greatest of all fields for the exercise of preventive medicine. He had been associated with such a school from the day it opened ten years ago, and he sketched the improvement brought about during that time. The difficulties of adapting a large country mansion to the purposes of a public school had been successfully overcome, but not without experience of the dangers of overcrowding more especially in the spread of droplet infection diseases. To deal with this disease group in such an institution an arrangement for expansion in dormitory accommodation was essential, and the control of such epidemics depended on the space available, together with early isolation.

He commended to his colleagues the unique opportunity presented by a school population for testing the efficacy of vaccines against the common cold. One of the more frequent minor ailments amongst school-boys was tinea cruris, which was apt to be regarded as devoid of interest until it chanced to spread to the scalp and attract attention there. At one time he had found tinea present in 10 per cent. of 350 boys. It could be cured in a week, but that meant treatment in bed.

Dr. Bernard Schlesinger remarked that Dr. Glover had stressed the spread of infection from bed to bed, and the defective spacing which seemed to underlie this; but many of these infections spread when the patients were not in bed. Dr. Spence had pointed out the dangers of the hospital ward to the infant, and the desirability of isolating the "clean" child in a separate cubicle. He would prefer to separate the dirty patients from the clean ones. If an infant was not getting along well, and the digestion was not what it should be, it should be put at once into a separate cubicle. Efficient nursing, he thought, came before floor space as a preventive of ward infection. In one London children's hospital one section was occupied by hospital patients, the other by private patients, the beds being similarly spaced. It was possible to give the latter a higher proportion of nurses, and among them epidemics were practically unknown. He had seen epidemics such as Dr. Glover had described among rheumatic children in hospital with sometimes serious sequelæ. To make the most of the space they had adopted the plan of putting the beds head to foot, so as to ensure the maximum distance from mouth to mouth. In streptococcal infection he had found regular doses of aspirin for three weeks valuable; it seemed clear that allergic manifestations could be prevented by aspirin therapy.

Dr. Geoffrey Marshall spoke of the conditions he had found in the dormitories of a preparatory school he had occasion to visit; the beds were side by side and almost touching one other. He was sure that slight cases of hospital fever still occurred, and it was wrong for physicians to take so little note of them. It had been his practice for many years never to admit to a general ward a case of Graves's disease if it could be treated in any other way; he had traced an epidemic which affected a whole ward to a patient with this disease. One occupant developed pericarditis and died.

Dr. F. H. Kelly said that at a certain preparatory school since the head-to-tail arrangement of beds had been introduced there had been far fewer cases of infectious disease. He had failed to get this arrangement sanctioned at a public school because the masters said it made the dormitories look untidy.

Dr. Montague Smith considered that the dysenteric group of infections gave the greatest anxiety to children's hospital authorities; they accounted for many cases of illness among the nurses. A child convalescing from a *B. coli* infection, when transferred to another ward, had infected all the other four children in it, with disastrous results. Cases of diarrhœa and vomiting should be treated in observation wards. He agreed with Dr. Spence that different nurses should do the feeding and the washing of utensils. Infections were, he thought, often conveyed to children's wards on visiting days; in his hospital the visiting was restricted to half an hour, and no children were allowed to visit. Infection in hospitals centred largely around the education of the nurses.

The Chairman said he could confirm what Dr. Glover had said as to the frequency with which paratyphoid fever was diagnosed as appendicitis. He thought every child who had diarrhœa should have its stools examined; almost always a pathogenic infection was present. He agreed with Dr. M. Smith as to the liability of intestinal infections to spread, especially among the new-born.

In reply Dr. Glover said he was much interested in Dr. Spence's infection theory in the causation of marasmus, and felt it was probably correct. He did not think that any child who had had acute rheumatism should be put into a scarlet fever ward, as, when that was done, a severe recurrence of the rheumatism was the rule. Such a child was much safer at home.

ROYAL SOCIETY OF MEDICINE

SECTION OF LARYNGOLOGY

The meeting of this section on Dec. 1st, under the presidency of Mr. Musgrave Woodman, was mainly occupied by a discussion on the subject of Recent Advances in the Treatment of

Carcinoma of the Œsophagus

from the Surgical and Radiological Aspects. Prof. Grey Turner said that the œsophagus was still the realm of experimental surgery. Radium and deep X ray therapy had proved very disappointing, and the surgical treatment of cancer of the œsophagus had been hampered by the inaccessible situation of the part involved and by the unwarranted impression that malignant disease of this organ is of a peculiarly virulent type and liable to disseminate at a very early stage. In the five cases in which he had been able to complete the removal of the œsophagus by the pull-through method there had been no evidence of dissemination. The truth was that in the past there had been little attempt to deal with these cases radically at an early stage. As a rule difficulty in swallowing, which at first might be only intermittent, had been allowed to drag on until it became not only a great discomfort but a serious menace to life and valuable time was thrown away. A change of heart in the profession, both as to the outlook and treatment, was essential for improved results. Prof. Grey Turner spoke briefly of malignant disease of the cervical œsophagus; here the difficulties of restoration were very great. The posterior mediastinal exposure for growths in this region had the advantage that the surgeon could conduct the manipulations under the direct guidance of the eye, but in practice the operation was very difficult, largely for anatomical reasons.

Prof. Grey Turner then described in detail the operation which he had designated the "pull-through" method. This plan had at last, after two failures, rewarded him with one complete success. In a third case (see p. 1315) the patient recovered. Six weeks after the operation on Oct. 4th, which completed the connexion between mouth and stomach, the gastrostomy tube was removed and the patient was able to take all food by the mouth. On this day a picture was taken at tea time when he had a poached egg with three slices of bread and butter, two pears, and half a pint of tea. Three days later leakage through a fistula restarted; the gastrostomy tube was reinserted, and a few days later the fistula was exposed and closed by suture. This time the whole area was covered by a film so that the suture line in the external skin and the deep sutures were not superimposed.

Prof. Grey Turner described two other cases, one of a man who lived for eight weeks after operation in which failure could be ascribed to technical errors which could be avoided in the future. As a result of his experience he felt that radical surgery held out considerable promise. Repair of the œsophagus should not be attempted, but after recovery from the excision a new œsophagus should be supplied by the anterior route. For growths of the upper end of the œsophagus he suggested an excision with formation of a cervical fistula and completion by a new œsophagus. For the lower end he would adopt the plan he had outlined; but for the middle portion he was inclined to give further consideration to the posterior mediastinal, or the transthoracic route. More information as to the exact living anatomy of these growths was required and here radiology and œsophagoscopy could help. To pessimists he would recall the high mortality which attended Sir Spencer Wells' pioneer work on ovariotomy, and yet his work helped to lay the foundation of the success which abdominal surgery enjoys to-day. The case presented was so recent that the ultimate fate of the patient was still in doubt, but the restoration of the capacity of normal feeding with some hope of freedom from recurrence has already proved an ample reward for the patient and his friends.

Mr. F. J. Cleminson, in association with Mr. J. P. Monkhouse, presented an analysis of 89 cases of carcinoma of the œsophagus, 79 men and 10 women, treated in the throat department of the Middlesex Hospital from 1925 to 1932; these excluded post-cricoid cases. He exhibited a table showing the chief sites occupied by the main growth. For the purpose of indicating these sites, the œsophagus was divided into three parts: upper three inches (6 cases), lower three inches (28 cases), and the intervening four inches (55 cases). The procedure adopted was first œsophagostomy, for diagnosis and biopsy, and then a skiagram in the Trendelenburg posture was taken to ascertain the extent of the growth. Radon was applied by means of silver tubes shaped like a zeppelin. Four of the cases were treated by thoracotomy following preliminary collapse of one lung, radon seeds being applied after the incision was made. In a fair percentage of the cases the ulceration disappeared after the treatment, without leaving any sign. In fatal cases, however, above and below the site of the growth there were found colonies of cancer cells lying in the lymphatics. He and his colleague avoided gastrostomy when that was possible. A short history of trouble did not necessarily mean that such a case was less advanced than one with a longer history. Only one patient in the series was treated by X rays. Post-mortem examination of fatal cases showed widespread dissemination, in mediastinal, cervical, and abdominal glands, and in pericardium, heart, lungs, liver, kidney, suprarenals, and pancreas.

Dr. Walter Levitt said that hitherto the results of X ray treatment of malignant cases had been disappointing, though the disease was histologically of a type which should prove radiosensitive. In 1923 Dr. N. S. Finzi treated a patient who had extensive œsophageal growth by means of radium. The growth disappeared, but the patient died of secondary deposits. In 1930 he (the speaker) treated a case of the kind by X rays and the growth was replaced by a fibrous stricture, and the patient lived two years. The results of X ray treatment of carcinoma of the œsophagus had been almost uniformly bad; all that could be hoped for was a moderate relief of the symptoms. Metastasis was relatively uncommon in carcinoma of the œsophagus; of 51 autopsies on such cases at St. Bartholomew's, 11 were free from metastases. These growths should be radiosensitive, and a technique had now been worked out by which greatly increased doses of the rays could be applied to the œsophagus. He described some good results from the treatment. The requirement was large doses of very hard X rays accurately concentrated on the œsophagus.

The President referred to the view of Prof. Grey Turner that the radiologist was the person to help determine whether a growth was fixed, and said the œsophagoscopist could tell all that was necessary about the growth, how it looked and how it moved. All members probably had cases in which a growth had been eradicated by the implantation of radon seeds inside the growth, but real relief was not obtained because the growth was not attacked from the outside.

Sir Thomas Dunhill paid a tribute to Prof. Grey Turner. It must always be remembered that, in the beginning, these growths were local, first being confined to the mucous membrane, then to the submucosa. The best results would be secured by attacking them at this stage. The degree of disturbance to patients who had undergone these operations was remarkably small, and he hoped Prof. Grey Turner would go on with his attack on the problem. In his own view the transpleural approach did not add much to the gravity, and would probably add much to the safety of the operation.

Mr. Gordon Taylor also congratulated Prof. Grey Turner on his pioneer work.

Dr. Finzi said it was now 20 years since he showed, before the society, a case of carcinoma of the œsophagus treated by radium. Not long after that he had a man with a similar disease who tolerated the passage of the œsophagoscope very well. The growth was behind the sternum, and it so completely disappeared under radium that many would not believe it had existed. The patient remained well two years, and when he died he was found to have a spread of carcinoma along the œsophagus below the region where the original growth had been. The part which had been treated remained free from growth. Another patient lived six years after similar treatment and then died of gastric ulcer, which she had had before radium was first applied.

Mr. L. F. O'Shaughnessy said that the problem which specially interested him was that of restoration of continuity after a resection of the œsophagus. Possibly radium and X ray therapy might take the place of surgery for this condition, but surgery would always be necessary for innocent tumours of the lower œsophagus. He saw two of these during six months abroad, and surgical treatment was very successful. He favoured an end-to-end anastomosis of the œsophagus, and this method was practicable for growths in the lower œsophagus. The fine result Prof. Grey Turner now showed was the more remarkable because it was the only œsophagoscopy which had been carried out successfully for carcinoma; yet if it were possible to restore safely within the chest the power of swallowing, this would have æsthetic advantages.

Mr. Walter Howarth said that the possibility of local excision depended on the mobility of the œsophagus and the position of the growth. At the upper end the only mobile portion of the œsophagus was from below the cricoid cartilage to the sternal notch. In that situation he had encountered only two cases, the first of them 12 years ago, when he excised that section of gullet and brought up the cut end from behind the sternum, uniting it to the deep pharynx. That patient lived six years, though he had a stenosis which prevented him swallowing more than semi-solids. The other case he saw nine years ago and the growth was in the cervical œsophagus. It extended so far that it could not be hooked into the wound, and so he had to be content with putting radon seeds round it. This man remained cured of his growth; there was some stenosis, but it was supple, and he swallowed well. Carcinoma patients could be kept going a long time on simple intubation.

Mr. T. B. **Jobson** wished to make a further plea for the use of radon seeds applied round the growth by means of the œsophagoscope. By using Souttar's tubes, diathermy, and so forth, it was rare to prolong life for more than six months, but during the last two years radon seeds had been used by his colleagues and himself, with encouraging results.

Dr. G. H. **Steele** supported Mr. Jobson's remarks. He had one patient apparently at death's door with cancer of the œsophagus, unable to swallow even liquids. Radon seeds were applied and he was now well. No mortality attached to this treatment.

Dr. **Douglas Webster** said he had had 14 cases of œsophageal cancer, and the only ones which had done well were those treated by prolonged methods such as Dr. Finzi and others had elaborated.

Prof. **Grey Turner**, in reply, said he forgot to mention the importance of endoscopic examination in these cases; it afforded much help.

Mr. **Clemmnson** also briefly replied. He had reported elsewhere his experience of thoracotomy; prolongation of life after this was no more than after endoscopic treatment.

REVIEWS AND NOTICES OF BOOKS

The History and Epidemiology of Syphilis

By **Wm. Allen Pusey**, A.M., M.D., LL.D., Professor of Dermatology Emeritus, University of Illinois; sometime President of the American Dermatological Association and of the American Medical Association. Baltimore: Charles C. Thomas. London: Baillière, Tindall and Cox. 1933. Pp. 113. 10*s*.

This little book comprises the Adolph Gehrmann lectures for 1933, given by Dr. Pusey in the College of Medicine, University of Illinois, Chicago. In three lectures he describes the beginning of syphilis in Europe, the development of our clinical knowledge of the disease, and its epidemiology. The book is admirably illustrated with nearly 40 reproductions of old prints, and portraits of syphilographers from Paracelsus and Falloppio to John Hunter, Wassermann, Noguchi, and Ehrlich.

Dr. Pusey is an adherent of the school which believes Columbus' crew to have acquired syphilis in Haiti, and to have spread it on their return to Europe, when many of them joined the army of Charles VIII. which descended on Naples in 1495. He describes this operation as a triumphal march of debauchery, and has collected evidence which shows the wide and rapid progress of syphilis after the disbandment of this army. The chronological sequence of the spread of the disease through all parts of the world which at that time (1497–1505) had any contact with Europe is indicated. The disease reached Japan only in 1569, a fact established by the elaborate studies of Prof. Dohi, of the University of Tokyo. The views of the pre-Columbian school are examined by Dr. Pusey; though his dismissal seems rather dogmatic at first sight it is supported by the preponderance of evidence. Dr. Pusey shows what a stimulus this new plague provided for the objective study of disease in the sixteenth century. The recognition of the venereal origin of a disease accompanied by severe constitutional symptoms started in 1497 an immense spate of literature. It is of interest that Paracelsus, who used both mercury and arsenic in the treatment of syphilis, and John Hunter alike confused the ideas of their successors by errors in observation. The work of the eighteenth century is admirably sketched, and Dr. Pusey pays a tribute to clinicians of that period whose descriptions of symptoms, signs, and pathology equal or even surpass those of modern writers.

These lectures bear the stamp of authority and provide entertaining and instructive reading. In a future edition we feel that Charles' fateful campaign might be given in greater detail, and the work would gain by the collection of the extensive references into a bibliography.

The Enlarged Prostate and Prostatic Obstruction

Second edition. By **Kenneth M. Walker**, F.R.C.S., Lecturer in Venereal Diseases at St. Bartholomew's Hospital; Surgeon with charge of Genito-Urinary Department, Royal Northern Hospital; Surgeon to St. Paul's Hospital. London: Humphrey Milford. Oxford University Press. 1933. Pp. 223. 14*s*.

In the second edition of Mr. Kenneth Walker's excellent survey of the treatment of prostatic obstruction there are two important additions: a chapter on the malignant prostate and one on the mechanism of obstruction. The author has chosen to give a general review of the subject rather than his personal views and experiences. It is difficult to make out, for instance, whether he is accustomed to do the open or the older prostatectomy, and which, among the several measures for the control of hæmorrhage, he himself adopts. His desire to present all sides sometimes leads to dilemma in the reader's mind. He gives the description of the open operation in Thomson Walker's own words, containing the assurance that in removing a wedge from the posterior margin of the opening left after enucleation "no fear need be entertained that cutting the vesical sphincter will cause post-operative incontinence" (p. 106). But on p. 13 we read that the internal sphincter is "the chief factor in bladder control" after prostatectomy unless it has been damaged during the operation, a statement which would seem to imply the desirability of preserving the sphincter.

It is not made clear whether Mr. Kenneth Walker uses an Irving box after operation or a suction apparatus: nor does he define his practice with regard to the testing of renal function. We cannot agree that "exactly which set of tests should be employed in a given case is of course a matter of personal taste." It must be possible to form some judgment on their relative merits. Fortunately Mr. Kenneth Walker's standard of reticence about his own practice breaks down in an account of his experience with perurethral operations, where he quotes the results obtained by him in 100 consecutive cases. This chapter is really valuable; his cases have been surprisingly free from complications and the mortality is significantly low.

To any surgeon or practitioner who wants to see the current views on prostatic obstruction briefly and succinctly described we commend this book. He could not find a saner and more unbiased account.

Handbook of Physiology

Thirty-third edition. By the late W. D. HALLIBURTON, M.D., F.R.C.P., F.R.S., formerly Professor of Physiology, University of London, King's College; and R. J. S. MCDOWALL, M.B., D.Sc., F.R.C.P. Edin., Professor of Physiology, University of London, King's College. London: John Murray. 1933. Pp. 971. 18s.

WITH the death of Prof. Halliburton this work, associated with his name for nearly 30 years, enters upon a new phase of its existence. The only visible sign of the change is the abrupt transition in the designation of the edition (from the nineteenth to the thirty-third) which indicates that now the original publication of Kirkes in 1848 is regarded as the first edition. The volume maintains not only the standard set by its predecessors, but also their tradition of catering primarily for the medical student. Although a comparatively short time has elapsed since the previous edition, opportunity has been taken to rearrange the first few chapters, and to introduce even more illustrations. The book also shows evidence of general revision and is quite up to date. The index is excellent, and the table of physiological data at the end very useful. Some of the figures given in this table do not agree with those in the text, but this is no disadvantage if it indicates to the student that the composition of expired air, for example, is not to be taken as absolutely constant. Students should be grateful to Prof. McDowall for keeping clear his trail through the forest of physiological facts, which grows with almost tropical rapidity. He makes it clear that selection of material has been necessary, and does not claim absolute completeness for the book. The insertion of blank pages for notes at the end of each chapter is a delicate compliment to the reader. Attractively bound, printed on good paper, well illustrated and pleasantly written, this work should continue to enjoy popularity among students who have not time or inclination to tackle the books which "contain everything," but want a reasonably detailed survey of physiology as a whole.

Stedman's Medical Dictionary

Twelfth revised edition of "A Practical Medical Dictionary." By THOMAS LATHROP STEDMAN, A.M., M.D., Editor of "The Twentieth Century Practice of Medicine." London: Baillière, Tindall and Cox. 1933. Pp. 1256. 35s.

THE eleventh edition of this dictionary appeared at the end of 1930, and since then, as Dr. Stedman rather unkindly remarks, "the prolific medical jargon has grown by an average of more than one new word a day." Thirty new pages have been added in which are included all the changes in the B.P. 1932. The work of keeping such a dictionary up to date is far more onerous than is generally appreciated, and the few slips which have caught our eye within the first few minutes of study may, as so often uncannily happens, be the only errors we shall find. For instance, there is a verbal slip under "hamamelidis folia." Roux's prenomen was not spelled Emil. Hugh Chamberlen's dates are more correctly given (1664–1728) in William Munk's Roll of the Royal College of Physicians of London. The inventor of the Nernst lamp was Walter, not Walther, and the filament is composed not of magnesium but of zirconia with oxides of the yttrium series. In the main the dictionary is impeccable, and we congratulate the author upon his accuracy and assiduity. The dictionary is a most valuable work.

Science and God

By BERNHARD BAVINK. Translated by H. S. HATFEILD. London: G. Bell and Sons, Ltd. 1933. Pp. 174. 5s.

MODERN physicists are inclined to look on the universe as a framework of thought; its content is not substance, which is now abandoned as unreal; hence there seems to be no obstacle to its being spiritual. Along these lines dualism disappears and there is no difficulty in a religious man being scientific or a scientist religious. Such is the briefest summary of a book which is already condensed; as the author says, it is not light reading.

St. Bartholomew's Hospital Reports

THE contents of this volume (LXVI., pp. 363, 1933, John Murray, 15s.) fall into four groups: clinical, pathological, statistical, and historical. The largest is the pathological group, composed of four papers, two of which by Dr. G. A. Harrison, on alkaptonuria and melanogenuria, and by Dr. W. G. Oakley, on the blood-urea clearance test, have a direct bearing on clinical problems. Dr. L. P. Garrod's thesis on inhibitory selective culture media contains original work on the selective cultivation of the *Streptococcus pyogenes*, and also renders easily accessible much information previously scattered throughout the literature about the use of differential inhibition in bacterial cultivation. Mr. Jackson Burrows publishes here in full, with an extensive bibliography, the Hunterian lecture on tissue culture in its relationship to surgical pathology, which appeared in abridged form in THE LANCET of Oct. 28th, 1933. Mr. John Beattie contributes a paper on a rare form of paralysis of certain of the leg muscles following parturition, due, he believes, to pressure upon the lumbo-sacral cord by the obstetric forceps; and the other clinical contribution is a record of the proceedings at a meeting of the surgical section of the Royal Society of Medicine, held at St. Bartholomew's Hospital in January, 1933. It includes a well-illustrated and detailed description by Mr. R. E. Norrish of the remarkable display of anatomical material, prepared under the direction of Prof. H. H. Woollard, to show the macroscopic and microscopic anatomy of the human sympathetic nervous system. Patients from whom portions of the sympathetic system had been excised for dysmenorrhœa, for disease of the urinary tract, the alimentary canal, and the blood-vessels were shown at the meeting; a brief account of the cases is here supplied with short commentaries on the therapeutic problems involved.

Statistical studies include a report on the health of the nursing staff, by Dr. W. P. S. Branson, and returns from the follow-up department showing late results in 1000 cases of carcinoma of the breast and 374 cases of carcinoma of the buccal cavity. In the latter, by Mr. R. W. Raven, an attempt has been made, by laborious analysis of the results of different methods of treatment, to deduce facts which may be a guide to future practice. Two prize essays on historical subjects, one written by a nurse and the other by a student, complete a volume which contains much that is stimulating, helpful, and interesting, and is worthy of detailed study.

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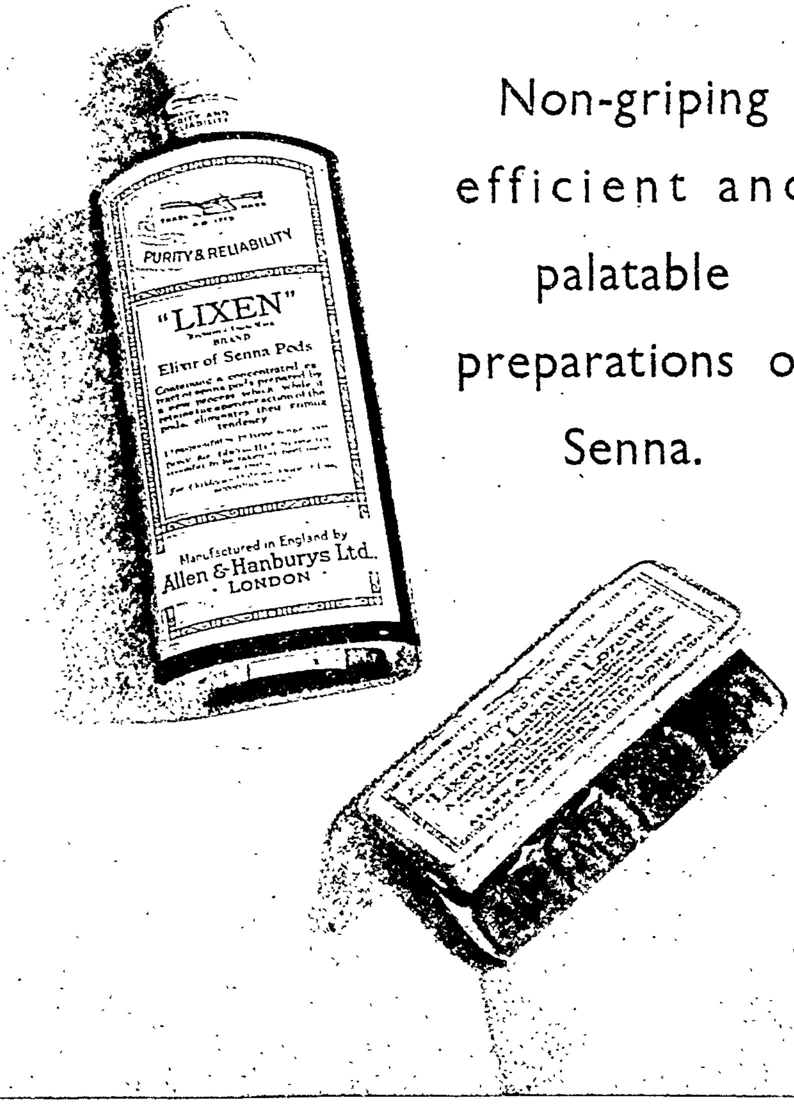

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THE LANCET

LONDON: SATURDAY, DECEMBER 9, 1933

UNEMPLOYMENT AND FOOD

THE original object of the unemployment insurance scheme was to save the worker from being thrown upon public or private charity during brief periods of enforced idleness. It was assumed that many of those insured would have savings or other resources that could be used in an emergency to supplement the benefits provided; and in fact, as is well remembered, the payments of "the dole" were often made to those who had no need of them nor any valid claim to the continuous support of an impoverished community. But these times have passed. The means test has made it impossible to go on drawing money unless such aid is conspicuously necessary, and the weekly payments of unemployment and transitional benefit, instead of being a temporary help, are now to many people the only source of livelihood, year in year out, for an indefinite period to come. In the Bill now presented to Parliament the Government faces this fact and endeavours to set the system on a firm and just basis, removing grievances and improving efficiency. This is a difficult and mostly thankless task, and the proposals have been greeted with corresponding respect. But it is right that they should also be subjected to very searching examination, for in England, as BAGEHOT pointed out, a criticism of administration is as much part of the polity as administration itself. The question of unemployment relief is only incidentally one of party politics and the English constitution will not be living up to its tradition unless all parties see to the justification of BAGEHOT's dictum that in debate "everything which is worth saying, everything which ought to be said, most certainly *will* be said."

For our part we wish to express a continuing concern for the sufficient feeding of the unemployed—and especially of their children. The B.M.A. committee's report,[1] which is only the last and most authoritative of several with the same message, does nothing to remove the opinion, widely held, that many families living on unemployment or transitional benefit are unable to secure an adequate diet unless they have other help. The difficulty of doing so increases with the number of children and their age. The weekly unemployment allowance per child is 2*s.*; whereas the committee find that no child should be fed for less than 2*s.* 6*d.*, and the cost goes up steadily until from 14 onwards a boy needs as much as his father (5*s.* to 6*s.*). If this view is substantially correct—and who will dispute it?—each child represents a monetary deficit; and though there may be some economy in catering for larger numbers the committee regard this as insignificant when expenditure on food is at a minimum. It is clear that if there are six or seven children, which cannot be very unusual, they are not likely to get the B.M.A. diet; and if in addition the rent happens to be high, which again is not exceptional, there is every likelihood of serious deficiency. But even parents wise enough to have only three children cannot always be in a position to provide proper food out of the benefit paid them. Such a couple would receive 23*s.* 3*d.* for themselves and 6*s.* for their children. If (not to take at all an extreme example) the latter were aged 1, 7, and 9, the family food on the "B.M.A. mean scale" would cost £1 a week, leaving 9*s.* 3*d.* for rent, clothes, fuel, lighting, bedding, insurances, and all other purposes. Rents being what they are, there must be many such households in which nothing like £1 can be found for food alone.

If, as these figures indicate, insurance benefit is commonly insufficient to give its recipients enough to eat, one would expect an increase of malnutrition in the population; yet we are assured that "there is, at present, no available medical evidence of any general increase in physical impairment, in sickness or in mortality."[2] The possible explanations of this discrepancy are several. To some extent it is due no doubt to inadequacy of the criteria used in judging good and bad nutrition. As the *Medical Officer* (Dec. 2nd) puts it:—

> "If you attempt to bridge a twenty foot stream with a 19·95 foot plank, the result is an obvious failure. But if you attempt to feed a 20*s.* food-value family on 19*s.* 11*d.* no measurable failure is apparent, at all events for a very long time. If you want to see results, you may have to cut the diet down to 10*s.* or less, for so long as bulk and caloric value are maintained, the ordinary signs of ill-nutrition do not become manifest."

Probably, however, the main reason why things are no worse is that the statutory benefits have often been supplemented—not by public assistance committees, which seldom go beyond the scale of the dole, but by the charity of neighbours and, where children are concerned, by local authorities through school meals and milk distribution. And here it is appropriate to note the word "general" in the Ministry's otherwise reassuring statement. The reports of medical officers of health analysed in our columns have shown that there are areas where malnutrition—sometimes of children, sometimes of mothers alone—is definitely increasing, and there are many other areas where the situation has been saved only by a rapid expansion of schemes for free dinners and the like. Local authorities vary in their opinions, and their practice: for example, Sir GEORGE NEWMAN[3] states that last year there were 174 of them using the permission to provide school meals, but 142 were not. We suggest that if supplementary feeding is necessary in order to make the present scale of unemployment benefit tolerable it should be readily accessible to all who need it. The Government does not propose to review the benefit scale; and it may well have public sanction for its determination to keep the money wages of the unemployed below the money wages of those in poorly-paid work. Nobody, however, wishes to apply economic pressure to the workless through their children, and it is impossible to justify the underfeeding of children in any part of this country at a time when food production is being restricted through the lack of markets. If, as we have said, supplementary feeding is a necessary part of the provision for the unemployed it should be accepted as a State liability—to be discharged perhaps through the new Unemployment Assistance Board. In fulfilling this function, the Board would certainly find strong support for a policy of generosity towards the young. To quote Sir Francis Fremantle: "We cannot be content with the present position; we want meals provided on such conditions that all children who need it shall get food."

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[1] Published as supplement to the *British Medical Journal* of Nov. 25th, and obtainable separately from B.M.A. House, Tavistock-square, London, W.C.1. Post free 6*d.* Reviewed in THE LANCET, Nov. 25th, p. 1215.

[2] Report of C.M.O. of the Ministry of Health, 1932, p. 41.

[3] Report of C.M.O. Board of Education 1932, p. 135.

EXPECTANT TREATMENT OF APPENDICITIS

Many years ago the policy usually followed in the treatment of acute appendicitis was one of delay in resort to operative measures. Then succeeded an era in which immediate laparotomy for every case was advocated. It was Ochsner who pointed out that some patients are so ill that any operation will kill them, and that a proportion of these can be saved by submitting them to a period of complete starvation with fluid only by rectum, maintenance of a sitting position, and morphia to ensure rest. From this has evolved the advice given by a number of surgeons, including the authors of several students' text-books, in favour of what is inaccurately called "delayed treatment." This advice is the cause of most of the remaining controversy over the management of acute appendicitis,[1] and it is chiefly from this point of view that a long monograph, produced by Gunnar Bauer[2] of the General Hospital of Malmö, will be found of interest.

In England there is no difference of opinion about treatment in the first 48 hours; it is during the third, fourth, and fifth days that that practice greatly varies. The successes claimed for "delayed treatment" at this stage are discounted by its critics because the series quoted are in some ways unrepresentative. There are always reservations; for example, children are regularly excluded. Thus, it is argued, the general impression of safety conveyed by its exponents is by no means wholly warranted. The object of non-interference is to obviate the risk of spreading the peritonitis to unaffected parts of the abdomen and the risk of producing a fæcal fistula during manipulations of softened bowel wall; the appendectomy is postponed to the quiescent interval, when the operation will be easy and safe. But there are also dangers and disadvantages in delay. The peritonitis may not localise but spread; an abscess may form and itself leak into the general peritoneal cavity—a very fatal event; an abscess though localised may lead to serious complications, such as other abdominal abscesses, pylephlebitis, or ileus; and absorption from the abscess may lead to a severe toxæmia, which will make the patient too ill to stand an operation. Although satisfactory resolution will take place in a majority of the cases, there is a substantial minority in which the only signs that operation has become necessary are those of spreading peritonitis—an indication that the immunity response of the patient is failing to deal with his infection. Moreover, the waiting period of starvation and toxæmia may be exceedingly unpleasant to the patient and the cause of grave anxiety to his medical attendant. In Bauer's experience at the Malmö clinic the disadvantages have quite outweighed the advantages. Of 18 cases in which the expectant method was used, serious complications arose in 16. Four of the patients quickly died; these cases however can be eliminated from consideration because they were probably too ill to be saved by any treatment. In two cases the peritonitis spread and necessitated operative intervention, after which one of the patients died. In seven cases an abscess perforated, and two of these were fatal. Of the remaining three, two patients after temporary improvement relapsed and died, being too ill for operative treatment; the third developed an abscess but recovered after it was opened.

In adopting expectant treatment the intention is to avoid operation at a time when it is particularly dangerous. The risks of such operation have probably been exaggerated, but if it is undertaken the surgeon should confine his activities to the minimum possible. Further contamination must be avoided, and if the appendix cannot be removed without laying bare further raw areas to infection, or running the risk of a fæcal fistula, it should be left behind. At the same time it has to be realised that there are serious objections in leaving the appendix in situ. The toxic and septic conditions are apt to be kept up, and extension may take place even when there is free drainage of the abscess cavity to the exterior. Here again the dangers of radical operation—that it may cause dissemination of the disease, ileus, or fæcal fistula—have been over-emphasised. The Malmö statistics, for what they are worth, are in favour of radical operation up to five days after the onset of appendicitis; after that there is scope for individual judgment. Bauer's opinion is that "immediate radical intervention attains the desired end quicker and more definitely, but may entail danger for the patient and ought to be practised only by experienced and technically skilled operators."

BORROWING MONEY TO BUY A PRACTICE

At a recent conference Dr. H. G. Dain said that a number of practitioners on the panel are tied hand and foot by moneylenders who had lent them money to buy their practices. The disclosure to which he was referring was made at the annual meeting of the National Association of Insurance Committees by Mr. H. W. Townley, a member of the Lancashire committee, and has been confirmed and indeed supplemented by Mr. J. A. SPEED, clerk to that committee, in an address which he gave to a Manchester group of approved societies on Nov. 22nd. "We have on our books," said Mr. Speed, according to a report in the *Manchester Guardian*, "over one hundred cases where panel fees, amounting to £50,000 a year, are assigned to persons who have no qualifications other than their wealth." He described a type of young doctor in Lancashire, with good qualifications but little experience and less money, who did not wish to begin practice as an assistant, and—to be his own master—needed an advance of money. As such, the first thing required of him, according to Mr. Townley, is to sign a form of resignation from the medical list on a document which bears no date nor the name of his successor. He next has to sign a form of mortgage on the practice, the terms of which are apt to be oppressive. A firm of moneylenders, said Mr. Townley, regularly presented to his committee an authority for payment of fees at the end of the quarter on what was good security, yet the rate of interest was over 40 per cent. The young doctor in question, when he comes to realise who is in fact his master, may desert the practice, when the moneylender simply completes the form of resignation and notifies the insurance committee the name of the successor to the practice. Doctors on the Lancashire list have thus become salaried servants subject to one month's notice not from the insurance committee but from the moneylender to whom all panel fees are assigned. The committee is determined to put an end to the situation, and has made suggestions which have been referred to the executive council of the National Association.

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[1] See, for example, THE LANCET, 1933, i., 363, 581, 1229, 1317, 1364.

[2] Zur Behandlung der Appendicitis-Peritonitis, Acta Chir. Scand., 1933, Suppl. xxiv.

It cannot be supposed that Lancashire is unique in having trustful borrowers and too-willing lenders, although we have the statement of the clerk of the West Riding committee that similar conditions do not prevail on that side of the Pennines. He was able to assure his committee a week or two ago that in all transfers of practices in the area any mortgage had been arranged through a reputable insurance company, and he knew of no case in which the incoming doctor had been exploited. But in London, at all events, panel fees have been assigned to moneylenders and the insurance committee has not intervened. There are, of course, as Dr. Dain remarked at the panel conference, a number of insurance companies prepared to advance money on reasonable terms—although opinion may differ on a definition of reasonableness. The applicant may want to get a loan of a large proportion, or even the whole, of the purchase price of the practice, and this may be refused him by the society which is careful to inquire whether he will then have sufficient money to live on. The lending company, which does not require any assignment of panel fees or of other receipts, must satisfy itself of the solidity of the borrower and may indeed, with advantage to him also, inquire into the practice to be sold—where the interests of lender and of purchaser are presumably the same. In the practice purchase scheme, for instance, of the Medical Sickness, Annuity and Life Assurance Society, which was inaugurated in 1927, it soon proved in the interests of both parties not to lend money without careful investigation, the result of which sometimes showed the applicant that the practice he proposed to purchase was not exactly suitable to his purpose. In this scheme an application for the whole purchase price is only entertained when the applicant can supply guarantors, and the loan is then offered at 4 per cent. per annum (after deduction of income-tax), repayment to be made over a period not exceeding ten years. Where no guarantor is available but the applicant can provide at least 20 per cent. of the purchase price, the interest is 4½ per cent., and repayment must be completed within seven years. The scheme has now been running six years without a single bad debt having been incurred, and a number of borrowers have repaid their loans in full. The Society stipulates that the borrower must join one or other of the defence societies, and must take out a sickness and accident policy with the Society. This seems reasonable enough, unless the lender is able to offer an equivalent policy as security, but some people would resent a loan from an insurance company being made conditional on doing business with that office and no other.

To those about to buy the whole or a share of a practice we would say don't do it without consulting a solicitor familiar with medical problems. No defence society will protect the imprudent from the results of his own acts, although they may wreck his whole life. The offer or acceptance of a loan on inequitable terms violates no professional principle. Little as the medical student learns about the ethical problems which will face him in practice, he is as a rule still less equipped to face the financial problems that will arise as soon as he thinks about starting in practice. It is something of a reproach that there is no one even in the large medical schools whose concern it is to advise on these subjects. Certain schools, it is true, invite senior men engaged in insurance practice to lecture to advanced students on panel work, but it is quite possible for a student, whether man or woman, to face the problem of starting in practice without having had any instruction or business training. Prevention in such matters would be far better than cure. We think it should be possible to appoint a roster of practitioners to meet groups of students in the later years of study, and to interest them in the material problems of medical practice, inasmuch as any mistake which is made may so easily be irrevocable.

THE ROYAL MEDICAL BENEVOLENT FUND

WE published recently an appeal from Sir THOMAS BARLOW on behalf of the Christmas Gifts Fund of the Royal Medical Benevolent Fund. This week Sir THOMAS repeats the appeal acknowledging a response up to the date of his letter which should enable a Christmas gift to be given to all the annuitants of the Fund; but, he adds, a further sum of £300 is still required if those who are in receipt of grants from the Fund are to receive similar treatment. The individual Christmas gifts amount to £1 10*s.* per head—a small sum, but only those who live on the edge of penury can appreciate the significance of its receipt. We trust therefore to be able to announce before Christmas that Sir THOMAS's letter has achieved its object, while adding that there is only just time to send in donations so that they may form a part of the Christmas disbursements. The donations should be addressed to the hon. treasurer of the R.M.B.F., at 11, Chandos-street, London, W.1, and we urge that their size should not be dictated by Sir THOMAS's modest request.

A sum of £300 is mentioned, but admirable use could be made of far more. For the opportunities afforded by the administration of the Fund for sadly needed beneficence are wide, and however varied they may be in detail have this in common—the situations have arisen in the families of our professional brethren. The amount received by the Fund as a reply to the Christmas appeal has been rising for the last two years; this is gratifying, but serves also to bring to mind that much wider support is needed to place the Fund in a position to meet the urgent claims upon it. The money for which Sir THOMAS pleads with an eye upon a special need will probably be forthcoming, but we feel that members of the medical profession should not define their donation as having an especial Christmas significance, or limit their generosity in accordance with the modesty of the topical plea, but should in far larger numbers than at present subscribe annually to the general purposes of the Fund. We have commented often upon the fact that the amount contributed annually by some 50,000 registered practitioners for medical benevolence is in bulk almost dramatically small, barely exceeding a subscription of 3*s.* 6*d.* per head; it is clear that the disproportion between what is needed and what is forthcoming results from the absence of general appreciation of the work of the Fund. Within the bounds that its income permits the Fund brings a relief from extreme penury to its annuitants and grantees, a relief whose value would often be much enhanced by increase in the amounts given. And the claims of many others outside the confined scope of the existing activities are very real, but remain unmet. There is a proverb, much employed at the end of the year, which suggests that he who gives quickly gives doubly. The proverb will not stand analysis; he who gives quickly gives conveniently but not in twofold measure. We wish to support Sir THOMAS BARLOW's appeal to our readers by begging that they should give not only with convenient quickness but also in two directions, that is to the Christmas Gifts Fund and to the general fund. When giving pleasure to the annuitants and grantees why should not pleasure also be given to those responsible for the working of the R.M.B.F. in the form of a substantial increase in annual subscribers?

ANNOTATIONS

INDUCTION OF ŒSTRUS BY SYNTHETIC COMPOUNDS

Two communications recently read before the Royal Society by Mr. J. W. Cook, D.Sc., Prof. E. C. Dodds, and their co-workers mark a new era in the study of œstrus-producing substances. The determination of a tentative structural formula for *trihydroxy and ketohydroxy* œstrin has shown that they are members of a wide group of substances, of which many have distinctive biological properties. A large number of these substances, of a structure analogous to that now accepted for œstrin, were examined for œstrus-producing activity. Several were found to be active; all these contained the phenanthrene ring-system, and the most active ones possessed oxygen-containing groups. Some of the compounds were only effective in large doses of 100 mg., but the di-*n*-propyl compounds showed a much greater activity, 0·05 mg. causing the characteristic changes. The special interest of these results lies in the fact, first, that substances differing widely in the details of molecular structure from the natural hormones can have œstrus-producing activity, and, secondly, that different biological activities may be shown by the same substance, since two of those now shown to be œstrogenic are also carcinogenic,[1] while a third is the antirachitic vitamin calciferol.

Chemical work on the œstrus-producing substances has not always been distinguished by the care taken with the biological testing, but in this work of Cook and Dodds the biological side has received very thorough attention. In particular, the old error of relying solely on the vaginal cornification reaction as a criterion of œstrus-producing activity has been carefully avoided. The uterine reaction (distension of the lumen in the rat and mouse) was also examined and, in addition, it was demonstrated that the synthetic compounds caused the feminisation of the plumage of the capon in the same way as does natural œstrin.

HEALTH OF THE ROYAL AIR FORCE FOR 1932

THE report[1] presented by Air Vice-Marshall J. McIntyre mentions 318·4 cases of disease per thousand in a total force of 31,577, compared with 359·3 last year in a force of 32,448. The most important medical fact about a service is the wastage: how many men have been lost in the year by final invaliding or death, and why? Questions to which an answer is readily found in this report. The chief causes of invaliding were pulmonary tuberculosis 31 (last year 19) and psychoneurosis 21 (last year 32); there were no deaths from cerebro-spinal fever (last year 10), 5 from carcinoma, 4 from pneumonia—in all 34 from disease. There were 81 deaths from accident, 46 of them from flying (including [illegible]: it is satisfactory to learn that [illegible] in proportion to the hours flown. The incidence of venereal disease has been steadily falling from 36·1 per thousand in 1921 to 11·3 this year, the lowest figure yet reached. Loss of service by malaria has been halved in four years, but that from sand-fly fever persists unchanged. The best certificate to the official care for hygiene in the force is the great increase in the monthly case-incidence which takes ce in England immediately after the men return m their home leave in January and October. ere is no such peak abroad, but cases there increase August to October, corresponding to the seasonal xima of sand-fly fever (July in Iraq), dysentery ugust) and malaria (September), both worst Basrah. Of schistosomiasis 35 cases came expectedly to notice a hundred miles or so north-st of Aden, where it had not been heard of before. nea cruris has been obstinately present for two ars at Cranwell. Research into the use of oxygen great altitudes has been continued, and has been use to the Everest expeditions. The physical ethods of the R.A.F. for examining candidates for ing are being extended to the selection of trades for prentices; recruits are minutely examined at entry, lf the candidates being rejected, but of 6 only the accepted is there mention of being discharged ter. During the year 3881 officers, cadets, and rman pilots were physically examined, between and 97 per cent. in the various categories being und fit for flying duties.

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[1] Nature, Jan. 11th and Feb. 11th, 1933; see THE LANCET, 1933, i., 373.

[1] H.M. Stationery Office. Pp. 81. 1*s.* 6*d.*

THE ST. LOUIS EPIDEMIC

LAST year in England and Wales only 564 cases of ncephalitis lethargica were notified and 825 deaths ere reported. This excess of deaths over notifica-ons includes a proportion of patients who were not eported during life and of patients reported in revious years who died after an interval of chronicity. hus the progressive decline in the number of cases nce 1924—the peak year when 5039 cases were otified with 1407 deaths—may be regarded as real. similar decline was observed in other countries p to the end of 1932, and encouraged the hope hat epidemic encephalitis was disappearing. Hence he serious outbreak in St. Louis, to which reference as recently made,[1] came with something of a shock. ncephalitis first appeared in North America in the inter of 1918–19, as a minor epidemic of a somnolent-phthalmoplegic form coupled with bulbar-paralytic nd amyostatic symptoms. During the last decade he deaths reported in the registration areas of the nited States have been as follows:—

1920	.. 1070	1924	.. 1441	1928	.. 1373
1921	.. 1355	1925	.. 1630	1929	.. 1313
1922	.. 1268	1926	.. 1499	1930	.. 1062
1923	.. 1966	1927	.. 1326	1931	.. 972

aking the death-rate at about 20 per cent., urgeon-General H. S. Cumming, who gave an ccount of the position at the October session f the Office International d'Hygiène Publique, stimates that between 20,000 and 22,000 cases occur nnually in the whole of the States. The disease was however regarded as declining until the occur-rence this summer of the outbreak in St. Louis and its environs, where in three months 1029 cases were reported with 187 deaths, a fatality-rate of 18 per cent. Cases have been reported from other cities in Missouri and the neighbouring States, the largest outbreak being at Independence, a suburb of Kansas City, with a population of 15,000, situated more than 200 miles from St. Louis. Cases have occurred each year in St. Louis itself, the highest incidences before this outbreak being in 1919, 1924, and 1932. Previous outbreaks in the United States have happened in winter or early spring, as is usual elsewhere, whereas the peak was reached this year in St. Louis county in the week ending Sept. 2nd and in the city a fortnight later. The majority of the cases and those with the highest case-fatality were in persons of 35 years and upwards; no special relation to race or sex was noted except the usual preponderance of males in the age-group under 15.

The clinical features of the St. Louis outbreak have been looked upon as somewhat anomalous in that ophthalmoplegia, ptosis, and strabismus were uncommon, while demonstrable meningeal involvement was practically constant in the recognisable cases. But since 1918, when involvement of the third nerve nucleus was almost the rule, the disease has shown a tendency to affect the whole brain and its symptomatology has been protean. The lesions in the American outbreak are those of encephalitis without special localisation in the basal ganglions and brain stem, resembling in this respect the Japanese epidemics of 1924 and 1927 which, like the outbreak this year in the Riukiu Islands, occurred during the summer months. There seems as yet no sufficient ground for regarding this as a new type of the disease, although its possibility has been suggested. Febrile onset, mental apathy (rather than pronounced somnolence), and delirium are no new features of the disease. Recovery when it has ensued has been as a rule prompt and apparently complete. An epidemiological feature which confirms the infective nature of the disease is the occurrence of connected cases and cases in the same family nearly as frequently as would be expected in an epidemic of poliomyelitis of like intensity and distribution. The United States is a vast country and considerable exaltation of the virus must have prevailed to produce an epidemic of this magnitude.

The epidemic has afforded a wealth of morbid material of which the skilled investigators of the United States public health service have taken full advantage. It will be recalled that in the localised but severe institutional outbreak that occurred at Derby in 1919, McIntosh and Turnbull succeeded in reproducing the disease in a monkey. Surgeon-General Cumming tells us that six monkeys inoculated with material from five different patients dying in St. Louis of encephalitis have shown fever beginning on the 8th to 14th day after inoculation. Coincident with the rise of temperature, tremors, incoördination, and weakness appeared. In three of these animals, submitted to pathological examination, the central nervous system showed lesions consistent with the picture found in human epidemic encephalitis. Reinoculation of material from these monkeys is continuing, but time must elapse before it can be stated that the human disease has been established in animals. It is now being maintained in the third generation.

CHEMOTHERAPY IN THE PREVENTION OF MALARIA

SANITARIANS in India and Malaya are showing much interest in experiments on the chemoprophylaxis of malaria as an alternative to the laborious and expensive anti-mosquito measures so far employed. The protagonists of the mosquito school, with long-sustained and weighty arguments, are still advancing their claims in the face of criticism, but in many districts the economic crisis, and especially the disastrous fall in the price of rubber and tin, has led to a trial of the cheaper and apparently the more economical method of prevention with drugs. Dr. R. B. Wallace,[1] who presents good reasons in its favour, has compared the results obtained in groups of labourers in four different divisions of a rubber estate. The coolies were all given an initial intensive treatment with Quinoplasmine—3 tablets daily for 14 days—in order to sterilise their blood. Thereafter one division, with a population of about 280 Indians, received 0·01 g. of Plasmoquine every third day; a second group, of about 330 Indians, was treated with two tablets of plasmoquine compound (i.e., 0·02 g. plasmoquine with grs. 4 quinine sulphate) twice weekly; while a third group of approximately the same numbers, was given 0·02 g. plasmoquine daily. At the same time antimalarial measures were carried out in these three areas. A fourth division, comprising some 330 people living in an area that had received no larvicidal treatment, was also given 0·02 g. pure plasmoquine daily. The experiments were carried out during the malaria season and extended over a period of five and a half months, and the result observed was that the malaria rates remained low on all the divisions. Although the rates were highest in the fourth, unoiled, area, the dose of 0·2 g. plasmoquine daily seemed to be successful in preventing malaria during the period of its administration, and this is noteworthy considering that the breeding-places of the chief vector were more numerous there than on all the other divisions put together. The cost of treatment on the second division, where the results were most successful, was approximately $1 per head per month—which is much less than the cost of antilarval measures and hospitalisation of cases.

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[1] THE LANCET, Oct. 7th, p. 811, and Oct. 21st, p. 931.

[1] Malayan Med. Jour., September, 1933, p. 145.

Wallace's paper is supplemented by a carefully tabulated study by Dr. B. Barrowman[2] whose conclusions are not quite the same. Barrowman holds that in hyperendemic malarial districts in Malaya no method of chemoprophylaxis is at present available which can be considered as an alternative to anti-mosquito measures for the protection of a population exceeding 80; with a small and isolated community, however, the incidence of clinical malaria may be controlled, either by daily mass administration of quinine, or by intermittent mass administration of plasmoquine combined with quinine. The cost of the latter remedy works out at about a quarter that of quinine; moreover, the treatment of patients with quinine merely until symptoms disappear is useless as a means of effecting a permanent cure, or as a sanitary measure. Comparing three months' treatment with quinine and three weeks' treatment with quinine plus plasmoquine, the latter is found to be 40 per cent. more effective in curing benign tertian infections, but nearly 60 per cent. less effective for subtertian infections. Its cost is about two-thirds. Atebrin he regards as less effective than quinine in rapidly removing the clinical symptoms of malaria, but its effects are more lasting, and are obtained at about a third of the price. In both benign tertian and subtertian infections, a combination of atebrin and plasmoquine gives by far the greatest proportion of permanent cures.

THE HEARING POWER OF SCHOOL-CHILDREN

The need of attempting to detect at an early stage hearing defects which, passing unrecognised, can be the cause of much disability in after life was urged by Dr. G. P. Crowden at a meeting of the section of otology of the Royal Society of Medicine on Dec. 1st. His thesis that a significant part of national health and efficiency is involved in the hearing power of the child is hardly to be disputed; even slight impairment undoubtedly leads to gross waste of educational opportunity. Inquiry as to the prevalence of ear defect has revealed a striking variation in the percentage incidence reported by school clinics, and the only explanation of this wide disparity seems to be a great difference in the capacity of testers. Unless tests are done carefully and accurately the resulting statistics must be unreliable. Dr. Crowden pointed out that the Bell Telephone Company has, at its own expense, helped the medical profession greatly by producing a reliable audiometer which is now being effectively used. One of these gramophone audiometers, which contain no battery but a magnetic pick-up, can operate 40 single-ear telephones linked up by wires; for testing purposes the wearers of the phones are required to mark down on cards all the numbers they hear called out from the gramophone, the intensity of the sound produced being gradually faded out. Some 30 members of the section tested the method during the meeting. For very young children the names of animals are substituted for numbers and are correlated with ingenious sets of small pictures. The audiometer, as Dr. Crowden claims, is valuable in three ways: (1) primarily as a detector of deafness; (2) to determine the degree of defect; and (3) to determine the value of hearing aids. The organisation of regular audiometer work has only recently been undertaken by the L.C.C., and no statistics are yet available, but Dr. A. Wells was already in a position to state, in the course of the discussion before the section, that the bulk of the children shown by the audiometer to have defective hearing bear no record of defect on their school clinic card; many children who failed on two tests were examined clinically and treated, and when tested later showed marked improvement.

The increasing use of audiometers seems to have revived a general interest in achieving greater precision in older methods of testing and greater efficiency of hearing aids. At the same meeting Sir James Dundas-Grant described a simplified method of determining the percentage of actual hearing power in tuning-fork tests, and a simple optical method of observing directly the decrement in amplitude. Mr. Alexander Tweedie referred to the activities of an institute for the deaf in Nottingham where demonstrations of aids for hearing were held several times a year. People who attended these were supplied with printed slips pointing out that aids were divisible into two groups: (1) some form of [illegible] ordinary ear-trumpet; and (2) [illegible] based on the simple telephone and consisting of a microphone, telephone receiver, and a small dry battery. Additional information supplied was that usually collectors were more useful than electric aids; that only the patient could decide the value of any aid to him, and that no aid should be bought without being given a two weeks' trial.

THE WHOLESOMENESS OF LIGHT BEER

From the Institute of Hygiene in the University of Halle comes a timely communication on the hygienic aspect of malt liquor as a beverage. Prof. Paul Schmidt regards prohibition of alcoholic beverages as impossible in Germany as elsewhere—which does not trouble him, as he believes there is no better means of preventing alcoholism than a light wholesome beer. But he is quite clear that it must be both light and wholesome; that is to say, the alcoholic content must be low and the fermentation nearly completed in the process of manufacture so that there is little left to be done in the human alimentary canal. He accepts the Widmark limit of 1·4 per mille of alcohol in the blood for safety on the road, and remarks that the consumption of anything like 4 oz. of (absolute) alcohol in an evening must inevitably overstep this limit. He would himself put the amount of pure alcohol that can safely be taken well diluted within a period of two to three hours on a full stomach by a healthy non-habituated man as about 1 oz. This quantity of alcohol he says is contained in various current brands of German beer as follows: three-quarters of a litre of Export beer (4 per cent. of alcohol by weight); one litre of light Munich or Bohemian draught beer (2·8 to 3 per cent.); one litre of Berlin white beer (2·5 per cent.). All these quantities are apt to be exceeded when the stronger export beer is the beverage. It is, he thinks, no good to encourage the export beer fans to drink the lighter top-fermentation beer, on account of its high acidity; but he does recommend the bottom-fermentation Lager beers with their very low acid content, and he would like the excise to sanction a gravity lower than 1045° for the wort in producing such a beverage as the 3·2 per cent. beer standardised in the U.S.A. when prohibition was abandoned. This action Prof. Schmidt regards as a hygienic deed of great significance, and the evidence satisfies him that the U.S.A. 3·2 per cent. beer is both tasty and wholesome. But he will have nothing of the claim made for beer of being a valuable food. To use beer for food, he writes, would be a criminal squandering of the German commonwealth. The description of beer for propaganda purposes as "fluid bread," may, he remarks, be regarded scientifically as done with. Even the content of dextrin, which has in Germany been vaunted as of nutritive value in beer, is not well borne by many people and is especially unsuited for older consumers. He would like to see the fermentation of the wort pushed so far as to reduce fermentation in the gut to the utmost, which he regards as the virtue of beer of the Pilsener type. But in Germany it appears that the women prefer a beer containing more extract at the expense of the alcohol. Prof. Schmidt's conclusion is that the alcohol content of the light beer which he is advocating should not be higher than 3 per cent. and that the extractives should be not higher than 5 or lower than 4 per cent. An alcohol content higher than 4 per cent. he regards as a risk to health and an unjustifiable waste of national resources; but he would not do away with the stronger beers, he would simply increase the duty on them. No one should drink beer on an empty stomach, and the drinker should use a small glass. He calls on the licensing authorities and the German brewing industry to coöperate in the production of such a light bottom-fermentation beer as he describes.

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[2] Malayan Med. Jour., September, 1933, p. 163.

CLEFT PALATE

AN essential for normal speech-production is the speaker's ability to shut off the nasal from the oral cavities. The valve which opens and closes the passage of communication between nose and mouth consists of the soft palate anteriorly, and the wall of the pharynx laterally and posteriorly. On the wall of the pharynx at the level of the soft palate a ridge (the ridge of Passavant) comes into play when the valve closes; it helps to make an air-tight junction between the soft palate and the posterior pharyngeal wall. In patients suffering from cleft palate the valve is hopelessly out of action. The dysfunction can be remedied by suture of the hard and soft palates and by speech training, but if, after suture, the soft palate remains short and tight, apposition between the soft palate and the posterior pharyngeal wall becomes an impossibility and speech *may* suffer. In these cases some form of pharyngoplasty to produce stenosis of the pharynx at the level of the soft palate, together with the reconstruction of Passavant's fold, as prescribed by Mr. W. E. M. Wardill, or the formation of an artificial septum between the uvula and the posterior pharyngeal wall as practised by Precechtel, may increase the competence of the valve and the clarity of the diction. Wardill's pharyngoplasty, described in a Hunterian lecture lately published,[1] aims at reformation of the palatopharyngeal valve. It consists of an incision made in the posterior pharyngeal wall down to, but not through, the buccopharyngeal membrane in a transverse direction at the level of the soft palate, which is subsequently sutured longitudinally; by this means the cavity of the nasopharynx is narrowed, and the salpingopharyngeal muscles which should be included in the sutures are brought at nearly as is possible into apposition in the midline. This procedure is not without the danger of septic complications, and in Wardill's hands carries a mortality of about 4 per cent. Its success should be judged by the diction following a course of speech-training, but even with a good anatomical result the function may not necessarily be improved. For example, in one of Wardill's cases: "the operation resulted in a perfect palatopharyngeal mechanism which complied with all the tests. . . . I did not see her till some months after. . . . I was amazed to find she had become one of the worst cleft palate speakers I have ever heard." Of the last 55 patients with cleft palate on whom Wardill has operated 13 speak normally, 6 speak badly, 19 have competent valves, and 17 are too young to ascertain the end-result. To obtain 13 patients with perfect diction in 38 consecutive cases is no mean success. If, however, an unselected series of patients with cleft palates are operated upon at an early age, according to the method of H. Round,[2] Victor Veau,[3] David Levi [4] and others, and if these patients subsequently attend a speech-training centre, good results may be expected. Among the failures there would be some cases in which pharyngoplasty might possibly improve speech-production; it would give them a good palatopharyngeal valve. But how many of them, and which among them, would recover perfect diction we are not at present able to foretell.

Before the section of odontology of the Royal Society of Medicine on Nov. 27th, Miss Freda Parsons demonstrated clearly that good functional results are not entirely dependent upon good anatomical closure of the cleft. She showed that, by training, a perfect functional result could be obtained in a child, despite a poor anatomical result, such as a short soft palate and a wide nasopharynx. The child could pronounce the S's, K's, and P's, and was as adept at blowing up balloons as normal children are.

WILLAN AND BATEMAN

THE famous dermatologist Robert Willan, and his almost equally well-known assistant and successor, Thomas Bateman, are the subject of three essays in the October issue of the *British Journal of Dermatology and Syphilis*, and for many reasons these pioneers in medical science and state medicine deserve to be recalled to our memory. Dr. Henry MacCormac writes on the connexion of Willan and Bateman with the Public Dispensary, established round about 1790 in Carey-street, now the site of the Bankruptcy Court, and still apparently having a direct descendant in Drury Lane. Here Dr. MacCormac obtained unexpected access to a minute book (the second not the first) covering the period from 1796 to 1828, and the incidents in the life of the Dispensary which became the parent body of the fever hospitals of London, make interesting reading to-day. Willan was evidently a great general physician and the same may be said of Bateman who followed him step by step and who owed his promotions to the patronage of his senior. The former obviously deserves a place among the great clinicians of his day, and the learning, which enabled him to be the father of British dermatology, arose from his study at the Public Dispensary of skin diseases in association with infectious fevers, which were much more prevalent and severe a hundred years ago than at the present time. Dr. J. D. Rolleston writes with special reference to the work done jointly by Willan and Bateman in relation to infectious fevers and records the words of that high authority Dr. J. F. Payne "that Willan's signal services to the science of medicine would have been less thoroughly appreciated than they are without Bateman's exposition of them. Willan, in the "Reports on Diseases in London," recommended that "houses of recovery" in connexion with the spread of contagious disease among the poor and in insanitary localities should be established in open airy situations. Dr. H. D. Haldin-Davis closes the little series with some "Personal Relics of Robert Willan," being a paper read at the recent annual meeting of the British Association of Dermatology and Syphilis in London. The paper is illustrated by a silhouette of Willan in the possession of the Medical Society of London, and both Dr. Haldin-Davis and Dr. Rolleston give pictures of Willan's tombstone, now erected on a wall in a cemetery in Madeira. The three essays compose together an instructive picture, and furnish once again an example of how far our predecessors could go in the pursuit of accurate clinical medicine without our advantages, derived from an infinitely increased knowledge of ætiology and the possession of a vast armamentarium. Willan and Bateman deserve recall to our memory.

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[1] Brit. Jour. Surg., October, 1933, p. 347.
[2] Brit. Med. Jour., 1927, i., 15.
[3] Division Palatine, Paris, 1931.
[4] THE LANCET, 1933, i., 515.

ADENOMATA OF THE PITUITARY GLAND

THE neurological surgeon and the special pathologist afford a good example of symbiosis in the medical world. Supplied with material by three such surgeons, G. Roussy and C. Oberling[1] have reviewed our knowledge of the histology of the pituitary adenomata and add the results of their own observations on a series of 41 specimens. It is not clear, however, what proportion of this series was of surgical origin; two of the specimens figured in the text are obviously taken from necropsy material. The authors state, moreover, that in the systematic examination of pituitary glands recovered at necropsy they have found microscopic adenomatous foci in about 10 per cent. of cases. Further information concerning the total number of cases examined and the method used in handling the glands would have made this statement valuable. Unless serial sections are made and a reasonably large number of glands are examined, any estimate of this kind is of little value. The incidence of these chance adenomata in necropsy material is certainly a problem that demands attention.

The results of their examination substantiate the findings of Norman Dott and Percival Bailey (1925) and of others who divide the pituitary adenomata into *chromophobe* (agranular), *chromophil* (acidophil and basophil), and *mixed* types. Dott and Bailey further subdivided their mixed type into three varieties: (1) with cells resembling those of the acidophil adenoma but with no granules or a few scattered granules only; (2) with cells resembling those of the chromophobe adenoma but with a ring of acidophil granules in the periphery of each cell; and (3) with cells of the chromophobe type but with faintly acidophil granules. The first of these three varieties corresponds pretty well to the transitional cell adenoma of Kraus, the cells of which have a voluminous cytoplasm like those of the chromophil cells but are devoid of granules. Roussy and Oberling distinguish four varieties of chromophobe adenoma: (1) adenoma of clear cells, which alone perhaps merits the epithet "chromophobe"; (2) adenoma of pregnancy cells, composed of large cells with acidophil cytoplasm bearing some resemblance to the so-called pregnancy cells (it may be added that the authors relate the pregnancy cell to the chief, or chromophobe cell, and herein differ from Erdheim and many other authorities, who regard it as a variety of the acidophil cell); and (3) adenoma of small chief cells, with clearly basophil cytoplasm. To these they add (4) the fœtal cell adenoma of Kraus, which is composed of cylindrical cells with dark cytoplasm and fusiform nuclei and arises in the lateral parts of the anterior lobe. They have identified one adenoma of the last-named type; it is evidently a chance histological finding.

Although in general agranular the cytoplasm in these tumours varies greatly in tinctorial properties. For this reason Roussy and Oberling would rather use the term "agranulocytic adenoma" or "adenoma of non-granular cells" to comprise their four types. They find that the sex distribution in their series is fairly equal, and that all ages from 16 to 62 years are represented, though only a few are over 45 years. Like many other observers, they also find that by far the greatest proportion of the surgical material is made up of the chromophobe types. But some investigators, notably those who are chiefly concerned with necropsy material, have asserted that the chromophil types are the more numerous, at any rate amongst the small adenomata. This may be explained by two alternative hypotheses: either the chromophobe types are more prone to grow to a large size than the chromophil, or else in the process of growth an adenoma that is primarily chromophil loses its differentiation and becomes chromophobe. Roussy and Oberling add little to what is already known of the chromophil types. It is interesting, however, that they figure a basophil adenoma which was accidentally found with the microscope; they are not able to state whether this was associated clinically with any of the features of Cushing's syndrome.

Malignancy is difficult to assess in these tumours. It is clear, however, that in rare instances they can be disseminated to other parts of the body, while others are of local malignancy only and infiltrate the adjacent parts of the brain. Many of them remain circumscribed and are obviously benign.

DONATIONS AND BEQUESTS.—The late Sir Arthur Mayo Robson left estate of the gross value of £101,401, with net personalty £66,231. He bequeathed £100 to the Leeds and West Riding Medical Charitable Society; £100 to the Fellowship of Medicine, Wimpole-street, W.; £1000 to the General Infirmary, Leeds, to endow an annual prize in surgery; and £200 to the Medical Department of the Leeds University towards the endowment of the Old Students Centenary Fellowship or, in the event of the £3500 required being fully subscribed, the bequest to form the nucleus for the endowment of a second Fellowship.

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[1] The opening scientific paper of a special number (Nov. 18th, 1933) of the Presse Médicale, issued in celebration of the fortieth anniversary of its foundation. The issue is beautifully produced and freely illustrated in colour. The Presse Médicale is published by Masson et Cie, 120, Boulevard Saint-Germain, Paris, VIe.

THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

VIII.—DIET AND DIETARIES

THE idea of preventing actual disease and anticipating possible conditions of ill-health by the regulation of diet has not progressed very far or penetrated profoundly the kitchen and the food-store. The scientific knowledge of dietetics, which has been built up on a sound basis, has made little impression as yet on the eating habits of our population. How many medical men, trained in physiology and chemistry and in the theoretical knowledge of foodstuffs, of calories, and of vitamins, apply this in any conscious way to their own habits of eating? You are faced at regular mealtimes with, I suppose, adequate quantities of food of variable quality and taste and apply yourselves to its consumption with little conscious judgment of your eating except qualitative and quantitative satisfaction within the means of your pocket. In other words, you eat all you want of what tastes best. You will learn, at least by the age of 40, that certain foods and drinks disagree with you from their intrinsic qualities and that either an excess or real deficiency in total intake will make you unfit.

When you enter practice you find that alimentary disturbances, minor and major, are overwhelmingly common, and also nutritional deviations from the normal, so that a large group are either too fat or too thin, or think they are. You are asked questions, sensible and foolish, which would require thousands of pages to answer. In one lecture detail is impossible, and Dr. McCance, who delivers the next lecture on diet, and myself, will neglect most of it in favour of a few general principles. These you may have heard already in other guise, but they probably need and certainly bear repetition.

You have been taught that an adequate diet, chemically considered, contains a sufficiency of calories in the form of carbohydrate, protein, and fat, and also adequate amounts of water, salts, and vitamins. Dr. McCance will deal with the last three and I shall confine myself to the quantitative and calorific aspects and try to translate the chemical requirements into terms of eating habits, and to show how appetite controls them and how neglect leads to disease. Few of the public know anything real or fundamental of the intrinsic value of different foods, although many mothers are aware of the importance of vitamins, especially in infant nutrition.

Calorific Requirements

A fundamental and true principle is the balance between calorific intake and expenditure. Both can be measured and it is certain that sooner or later a preponderance of one over the other leads to any increase or decrease in weight. The weight is therefore the important index of a proper balance between an adequate diet and the requirements of activity, and any departure from the patient's normal weight merits attention in consideration of the early developments of disease.

As regards scientific measurement, you are aware that the calorie is the unit of interchangeable heat and energy in terms of which we talk, both about the intake and output. As regards the former, it is known that carbohydrate and protein both provide 4 calories for every gramme eaten and metabolised in the body, whereas fat is, weight for weight, more nourishing and produces 9 calories. The intake varies greatly in adult individuals, but in this country varies between 2500 and 3500 calories and is provided by 300–500 grammes of carbohydrate and some 100 grammes each of protein and fat. It matters very little to the normal body how the total necessary calories are provided; it can use them as fuel in any form. But it is essential that sufficient protein must be supplied to replace the waste and body use of nitrogen compounds.

In adults 1 gramme of protein per kilogramme (2 lb.) of body-weight completely satisfies this requirement, and ½ gramme may maintain nitrogenous equilibrium if an abundance of other foodstuffs is available. In a growing child much more protein is required for fully satisfactory development, and it is important to know and remember that the boy of 10 to 16 requires far more meat than his father. Another indication of the importance of protein in growth is given by the varying protein content of mammals' milk. The quicker the animal's growth the higher the percentage of protein in the milk of that species.

Unfortunately protein is the most expensive form of food, and it is certain that many growing boys and girls in the lower classes do not get enough of it to satisfy fully their requirement. Carbohydrate is the cheapest kind of food, and, as we would expect, provides the bulk of calories in the form of bread, potatoes, rice, and sugar. The animal forms of fat, butter and suet, are expensive, but such products as margarine are practically no more expensive than the carbohydrates. One pennyworth of bread provides 900 calories; of margarine, 700 calories.

As regards a person's output of calories, this has been and can be carefully measured by direct and indirect calorimetry, and in any person it is found to correspond closely with the calorific intake—namely, some 2500 to 3500 calories per day. But this output depends on, and varies enormously with, the activity and size of the individual. Canadian lumbermen have been found to expend and eat 5000–6000 calories a day, whereas an invalid in bed may use only 1500. Size and weight must also be considered, for it is obvious that a man of 16 st. needs twice as many calories as a woman of 8 st. The best way to think and talk about calories, in considering whether a diet contains too many or too little, is to express them as so many calories per kilogramme of body-weight, which at once introduces uniformity for different individuals. Expressed in this way it is known that a normal man uses 25 calories per kilogramme in the resting condition (basal metabolism): 30–35 when leading a sedentary life, and 40 to 60—or even more—when leading a life of great physical activity.

Body-weight as a Health Indication

Weight is a most important indication of health, and a change in either direction a most important early indication of disease. The constancy of weight, varying only within a pound over a period of years, is remarkable in many adults, especially men, and is a sign of good health. It is remarkable how such constancy is maintained for years without conscious effort, because it means that the intake of calories is very exactly balanced to meet the output. When this balance is disturbed all persons inevitably gain or lose weight, and it is well to remember that *all* weight changes are essentially dependent on such factors.

Apart from factors affecting the balance between intake and output, which we shall consider soon, a change from a constant weight must be suspected as indicating some disease. Most people do not weigh themselves often enough—in my view everyone should weigh himself at least once a year—and cannot aid their doctor by any exact memory of their previous weights. Others make an unnecessary fetish of their weight and gloat or despond every morning over a gain or loss of a few ounces, which is quite without significance, for unless carried out under strictly standard conditions variations of less than half a pound mean nothing. It seems hardly necessary to point out (though most people do not realise it) that a full bladder contains quite one pound of urine, and that hearty eaters may have gained five or even more pounds at the end of a meal.

Apart then from changes in diet or habits, a loss of weight requires thorough investigation, as it may be based on such serious disease as tubercle, cancer, or diabetes, and be the first sign which leads to their discovery. On the other hand, a gain in weight may be found in the earliest stage of myxœdema or diabetes, or be a precursor to an obscure endocrine disorder. Gain in weight and obesity generally presents many obscure and subtle problems, much more difficult to solve than loss of weight. At a certain time in middle age, many people put on weight independent of observable change in their habits. This is particularly common in women, and it is a curious fact how often their obesity can definitely be dated to a pregnancy. No doubt this is due to a complex endocrine disturbance, as are the obesities which start at the menopause; but they are not fully understood and seem partly to defy the law of the conservation of matter, as these patients conserve their fat to a pathological extent, even although it may be partially reduced by diet restriction.

Factors Controlling Nutritional Balance

It is not my intention to deal with social factors in any full or economic sense except as far as they immediately reflect on the individual as over- or underfed. It is certain that in the far and even recent past few persons were subjected to the temptations of, and to diseases begotten by, an excess of food. Primitive man or his ancestors, in whom our digestive and metabolic mechanisms were evolved, could never have been for long in conditions of overnutrition. In the short period (some 10,000 years) over which some details of the social habits of mankind are known to us it is equally certain that only a small proportion of men, and these of the ruling classes, could have had as much food as they wanted or more than they needed. It is therefore probable that the human machine was attuned to its best health on the absence of a surfeit of food, and certainly modern life assurance statistics bear out the unhealthy effect on age and fitness of an excess of fat and body-weight.

Under present-day conditions in this country, in spite of the economic slump, acute total undernutrition is probably rarer than ever before, and a smaller section of our population is actually suffering from lack of total calories, though this does occur in individuals and small groups of our people. Apart from actual undernutrition, the quality of the food is of great importance; excessive chemical treatment of foodstuffs and the high proportion of cheap soft carbohydrate foods and the certain deficiency of vitamins and roughage in the diet of many of the "lower classes" is disturbing. I shall not go into such questions here, but would like to dwell a little, if I may, on the question of how a man eats what he does when plenty or superabundance of food is available, and when only appetite or hunger are his guiding factors. After all, the majority of us are ruled by these two sensations, and nothing else, in our eating habits. Nature, to use that word, put them there as compelling instincts and probably nothing is more vital in dietetics than an understanding of them. Pathological conditions occur in which perversions of these instincts, hunger pains, bulimia, and so forth appear and are mentioned only in a brief line in most text-books. Physiological studies of appetite and hunger and gastric movements are, it is true, to be found in isolated articles; these I have not attempted to pursue in compiling this lecture and what ideas I venture to bring before you are the outcome of my own impressions.

APPETITE AND HUNGER

You have all felt appetite, I hope before every meal, but probably many of you have never experienced hunger. There is a difference which I shall try to describe, having experienced them both. Normal appetite is the slightly expectant feeling when the usual mealtime approaches that food would be desirable. It is in most cases more a mental attitude than a physical necessity, although a slight emptiness in the epigastrium, associated with increased gastric tonus, may be felt. If attention is distracted, perhaps if a cigarette is smoked, these minor sensations may pass off and be entirely forgotten for some hours. Hunger is something different, more profound and lasting, deep rather than superficial, ravening and insistent, destroying all social codes. Let me illustrate what hunger is by two examples.

In starvation for several days, let us say after a siege of war or a wreck at sea, one may be reduced to such a stage of weakness that neither appetite nor hunger is felt. But, when one starts eating, real hunger develops and may be insatiable for several days. One may eat to the point of uncomfortable distension, and if one is not sick he may still feel hungry. In uncontrolled diabetes too, the largest meal may leave the patient quite unsatisfied and ravenous, with a hollow gnawing ache, although the stomach is distended. What is the explanation of these facts?

Sensations of appetite and hunger have commonly been attributed to and associated with the level of the concentration in the blood of sugar, the most obvious and direct nourishing substance in the blood. This theory is, in my opinion, undoubtedly true, and I think that the only time in which a normal person feels a healthy appetite is when his blood-sugar is at the low normal level for that person, some 80 to 90 mg. per 100 c.cm. The commonest cause of lack of appetite is overfeeding, and frequent meals at such close intervals that the blood-sugar hardly ever falls to a low normal for the individual. In countries where two or even one meal a day is the usual habit, lack of appetite seldom occurs, although subsequent indigestion may be met with owing to the excessive content and bulk of such infrequent meals. However, I am sure that the common cause of "indigestion and dyspepsia" in normal persons is overeating. This is a fact that has been especially noticeable to me in treating diabetics. In most cases of previous dyspepsia all symptoms of stomach trouble disappear when the total diet is restricted. However great the bulk of their meals may be, the patients find that they can eat anything without discomfort, even such indigestible foods as radishes and roast pork leaving them unscathed. I do not know exactly if it is the restriction of carbohydrate or total calories that cures the dyspepsia, but both are worth trying in cases of chronic dyspepsia. The relation between blood-sugar and appetite is emphasised by the intense hunger that many patients experience when, following a mild overdose of insulin, the blood-sugar falls to hypoglycæmic levels.

But this is certainly not the whole truth, nor can appetite be entirely dependent on blood-sugar concentration. In severe diabetes the latter may be five times the normal, yet the largest meal may have no effect on a perpetual hunger. Certainly this great excess of blood-sugar is not available and does not nourish the patient; and it is on this reasoning that I have come to the conclusion that real hunger, both in starvation and in diabetes, is a metabolic thing. Whether or not a hormonal substance is set in circulation, the total body tissues cry for available food. In diabetes, this hunger is not satisfied, even in the first few days of insulin treatment with a large diet, until a considerable gain of weight begins to show that nutritional demands are being met. The same is apparent after a period of real starvation, where several days of full feeding are necessary before a normal appetite replaces hunger. Another disease of metabolism, hyperthyroidism, with its increased fuel consumption, offers further evidence in the same direction. With abundant intake of food and, if anything, a raised blood-sugar, the patient is perpetually hungry and eats enormously. I therefore hold that hunger is an urge of metabolic necessity, controlled by factors which are so far intangible. Appetite is less urgent, perhaps dependent on the effect of blood-sugar concentration, direct or through vagus centres, on gastric tonus, but in any case amenable to social habits and mental influence. Appetite we may influence, direct, and control; hunger has no place in a civilised community, undermines morale, and is ethically uncontrollable.

I do not attempt to consider here cases of real disease where appetite is decreased or augmented. Tuberculosis, cancer, the anæmias, Bright's disease, and bacterial toxæmias may cause the sight and thought of food to be a burden. Hence, like a loss of weight, lack of appetite may be the earliest sign of disease and should not be passed over lightly. Excessive hunger is also an abnormal symptom which cannot be neglected and has often a profound physical basis. Nervous distortions, mostly psychical, may have a considerable effect in both directions; their syndromes are dealt with in suitable text-books. A purely "nervous" disturbance of such fundamental appetites is grave and puzzling in the extreme.

ACTION OF NORMAL APPETITE IN CONTROLLING NUTRITIONAL BALANCE

Where no economic scarcity, personal or national, is present, and appetite alone is left to choose what the healthy person shall eat, it is interesting to see whether appetite acts as a true guide to healthy eating in modern life. I have studied eating perhaps more closely than most people, and I think the healthy dictates of appetite are followed in perhaps 90 per cent. of people. In most cases the amount of food eaten is automatically adjusted to meet varying calorific requirements. I have watched the sedentary professional man with a small appetite develop that of a lusty labourer when on a walking holiday. Such a fact must be familiar in your own experience, as must also be the distaste for foods of high calorific value like butter and fat in hot weather when they are not required. It is common to hear that nearly everybody eats too much, but I do not think this is correct, although it is probably true that most people could by eating less live at a lower nutritional level without noticing much, if any, diminution in energy.

Certain groups of people and many individuals undoubtedly neglect the healthy dictates of appetite and definitely overeat. The most noticeable group in this country are those who have never had enough to eat when young, usually through poor social conditions, and who carry on the habit of eating all they can when they reach affluence. *Punch* never draws a slim nouveau-riche. In many elderly people, too, with no great interest in life except food and possessions, natural appetite often atrophies and is replaced by greedy habits. Women, I think, are worse offenders in this respect than men.

Conclusion

I have touched on very few aspects in which diet enters into preventive medicine, but I believe that nothing is so important in keeping the individual and the population healthy as proper eating and nutrition. Yet hardly anyone, except those labelled as faddist, pays any attention to the subject or knows anything real about it. In a few directions progress has been made; our public health authorities ensure a supply of food at least fairly clean and pure, and our infant welfare centres apply and teach the new knowledge of infant dietetics with conspicuous improvement in the infant death-rate.

Elsewhere general knowledge of the simple scientific facts of dietetics is not even born. The legislators, we must conclude, know nothing of minimal diet requirements in their budgeting. And our citizens, when not depressed to minimal nutrition by their social positions, know nothing of regulating and controlling any possible economic choice to the best advantage. Not that the necessary education is difficult or dull. The subject could be understood by the boy of 14 and is certainly more interesting and important than the tributaries of the Great Ouse or the relative population of Liverpool and Manchester. It fills me with pity and horror when I see both the rich- and poor-sick wasting large or relatively large sums of money on patent foods which may cost five times as much and confer no greater benefit than a slice of bread or a bowl of beef-tea. All too often, if not invariably, when the general public are immediately or personally interested in diet, they become the prey of the skilfully devised commercial advertisement vaunting at high profit special properties in certain preparations which a moment's reflection based on their analyses shows entirely false. None of you, I hope, would be led to believe, for example, that any fluid extract of meat could either put beef into you or could specifically prevent disease, or that the drying and slight toasting of wheat could produce a breakfast food essentially different from toast as far as nutritive qualities are concerned, though the relative palatability is a matter of individual taste. It should be your concern, especially where the needs of your poorer patients are under discussion, to help them to plan their weekly food budget to the greatest advantage. Mostly this will involve the neglect of proprietary articles in favour of such homely foodstuffs as milk, bread, and butter. The public does not know and needs education. We have the advantage of an education in such matters and I hope are able to, and will, support the dissemination of truth and health in, and through, dietetics.

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SPECIAL ARTICLES

GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV. 28TH–DEC. 2ND, 1933

Penal Cases Reported by the Dental Board

IN accordance with custom, the Council deliberated on its findings in camera, strangers being readmitted to hear its decision.

The Case of James Alexander Randolph Allison, registered as of The Dampton, Kilbarchan, Renfrewshire, "Dentist 1921."

At the hearing before the Dental Board the following facts were established by the evidence: Allison went into various public-houses and told the person there that he had come out without his money, adding that if he was supplied with a bottle of whisky he would pay for it later. He gave a false name and address, and in no case was he supplied. Allison pleaded guilty, and said that since he had been in previous trouble he had been keeping off drink, and the present charge had been caused by a simple lapse. He was convicted.

The Dental Board therefore recommended that Mr. Allison's name be removed from the Dental Register, and, after consideration in camera, the President announced that the Registrar had been directed to erase the name from the Dental Register.

The Case of John Black Cochrane Fowler, registered as of 32, South Tay-street, Dundee, "Dentist 1921."

This case was reported to the Board by the Department of Health for Scotland, who, as the result of an inquiry held under the provisions of the National Health Insurance (Dental Benefit) Regulations, 1930, declared in pursuance of Article 46 (2) of the Regulations that the said John Black Cochrane Fowler was to be regarded as unsuitable for service in connexion with dental benefit as from Oct. 12th, 1933.

The evidence before the Dental Board established that Mr. Fowler had induced a patient to sign a dental letter whereby he obtained £3 6*s*. 3*d*. from the approved society for work which he had never carried out.

Mr. Fowler attended. Mr. Harper laid the facts before the Council and Mr. Fowler addressed it and answered questions. After deliberation in camera the President announced that the Registrar had been directed to erase Mr. Fowler's name from the Dental Register.

The Case of Allan Montgomery, registered as of 14, Sawmill-road, Partick, Glasgow, "Dentist 1921."

The evidence before the Dental Board had established that in two cases Mr. Montgomery had extracted teeth and supplied dentures, signing letters for the Scottish Co-operative Friendly Society and Scottish United Reform Approved Society. In both cases the dentures had been very unsatisfactory and had been returned for alteration, but the patients had subsequently been unable to recover them; nor had the societies been able to recover the moneys they had paid over.

Mr. Montgomery was not present. Mr. Harper addressed the Council and read a letter from Mr. Montgomery. The President, after deliberation in camera, announced that the Council had directed the Registrar to remove Mr. Montgomery's name from the Dental Register.

The Case of Donald Morrison, registered as of c/o R. L. Stewart, 86, Nethergate, Dundee, "Dentist 1921."

This case was reported to the Board by the Department of Health for Scotland, who, as the result of an inquiry held under the provisions of the National Health Insurance (Dental Benefit) Regulations, 1930, declared in pursuance of Article 46 (2) of the Regulations that the said Donald Morrison was to be regarded as unsuitable for service in connexion with dental benefit as from Oct. 4th, 1933.

The following facts had been established by the Dental Board: a member of the Scottish Professional Assistants' Society had received dental treatment from Mr. Morrison, but had been dissatisfied and had not had the work completed. Nevertheless the Society had received a dental letter purporting to be signed by the patient, who had not in fact signed it. Moreover, Mr. Morrison had been convicted at the Belfast Petty Sessions Court of being drunk, and at the Dundee Police-court of being disorderly.

Mr. Morrison was not present. Mr. Harper set out the facts and, after deliberation in camera, the President announced that Mr. Morrison's name would be erased from the Dental Register.

Penal Cases Adjourned from Previous Sessions

The Case of Aiden Joseph O'Sullivan, registered as of 59, Whetstone-lane, Birkenhead, Cheshire, L.A.H. Dub. 1919, who had been summoned to appear before the Council in November, 1932, as a result of two convictions for being drunk while in charge of a car. The facts alleged had been found proved, and judgment had been postponed for 12 months. Mr. O'Sullivan appeared in answer to his notice, bringing with him five testimonials from medical colleagues. He said that he was now a total abstainer. After deliberation in camera, the President announced that the Council had not seen fit to direct the erasure of Mr. O'Sullivan's name.

The Case of John Alexander Tolmie, registered as of 295, Anlaby-road, Hull, L.R.C.P. Edin. 1917, L.R.C.S. Edin. 1917, L.R.F.P.S. Glasg. 1917, who had been summoned to appear before the Council at the November Session 1932 for having been convicted on two charges of drunkenness and on several charges concerning motoring offences. The charges had been found proved, and judgment postponed for 12 months. Mr. Tolmie appeared accompanied by Mr. Thomas Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society. Mr. Carthew read testimonials affirming that the respondent's habits and conduct during the interval had been beyond reproach, and the Council decided not to order the respondent's name to be erased.

New Penal Cases

CONVICTIONS UNDER THE DANGEROUS DRUGS ACT

The Case of Frederick Richard Lanfear Miller, registered as of 53, Pembridge-villas, Notting Hill Gate, London, W.11, M.R.C.S. Eng. 1922, L.R.C.P. Lond. 1922, who had been summoned to appear before the Council on the following charge:—

"That you were convicted at the West London Police-court on Sept. 22nd, 1932, that being a person authorised to supply dangerous drugs, you failed to enter required particulars in a register or day book on June 15th, June 28th, and July 7th, 1932, and were fined £5 and 3 guineas costs. There were other convictions in 1933 of being in unlawful possession of morphine sulphate, for which a sentence of imprisonment in the second division had been incurred."

There was no complainant in this case. Mr. Miller attended in answer to his notice, accompanied by Mr. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, on behalf of the London and Counties Medical Protection Society.

Mr. C. J. S. Harper, solicitor to the Council, laid the facts before the Council. Mr. Miller, giving evidence on his own behalf, stated that he had contracted severe dysentery during the war and had taken morphia on medical advice. This had started a habit. He had come back to England, set up in practice in London, and made determined efforts to cure himself. He had entered Bethlem Hospital, but after being demorphinised he had suffered from intractable insomnia; he had tried everything to avoid morphia, but had been driven back to it. He had been sent to prison not by way of punishment but in order to give him a chance to abandon his addiction under suitable treatment. Mr. Carthew pointed to Mr. Miller's great strength of character, and the efforts he was making to cure himself, and said that the doctor to whom he had sold his practice was willing to take him as a partner when he came out of prison, and that the prison medical officer gave a good prognosis. The Council decided not to order Mr. Miller's name to be erased but to suspend judgment for a year, subject to their usual provisos that before the end of that time the respondent should produce evidence of his good behaviour and the names of a number of his professional brethren who would be willing to give testimony on his behalf.

The Case of Gerald Douglas Newton, registered as of 15, Walker-terrace, Gateshead-on-Tyne, L.M.S.S.A. Lond. 1914, triple Scottish qualification 1915.

Mr. Newton appeared before the Council on the charge of having been convicted at the Gateshead Police-court on Sept. 25th, 1933, on three charges of unlawfully failing to keep a register and enter therein true particulars of various quantities of cocaine hydrochloride obtained by him, and on one charge of failing to preserve the register for two years after the date of the last entry. A fine of £20 and £12 costs had been inflicted.

Mr. Newton was not accompanied by a legal adviser. Mr. Harper laid before the Council a transcript of the evidence heard before the police-court; this showed that between August 4th, 1932, and Jan. 11th, 1933, Mr. Newton had purchased grs. 2372 of cocaine—an average of grs. 103 a week. His private practice consisted of 50 patients, his panel of 2400 patients, and his club practice of 150 families. Various chemists had testified that the quantities of cocaine purchased by the respondent were excessive for a practice of this size. Giving evidence in his defence, he had stated that he had used cocaine in cases where other doctors would use morphia: in skin complaints to relieve pain, in cancer, sciatica, lumbago, and synovitis of the knee. He regarded cocaine, used discreetly, as one of the most valuable of drugs, and the cost was trifling. He never used morphia. He had ascribed the failure to register the quantities in question to mislaying the book at the time of a heavy influenza epidemic, in which he had himself been unwell. Mr. Harper pointed out that the drug must have been used in one or more of three ways: in practice, personally, or in trafficking, and suggested that the circumstances threw suspicion on Mr. Newton of an improper use of it.

Mr. Newton, giving evidence on his own behalf, denied that he had ever used cocaine illegally or unprofessionally, either by taking it himself or by trafficking in it. His practice was larger than had been stated.

The President announced that the Council had found the convictions proved. These convictions, he said, showed that Mr. Newton had not duly apprehended his responsibilities as a medical man or the privileges conferred on medical men under the Dangerous Drugs Acts. The Warning Notice of the Council was quite clear: that contravention of the Acts or Regulations might lead to criminal proceedings and that a conviction might be dealt with by the Council. In the present case, however, the Council had not decided to direct the erasure of Mr. Newton's name from the Register, but trusted that the experience would be a lesson to him and that there would be no further police proceedings.

The Case of James Scott Webster, registered as of 31, Bank-road, Bootle, Liverpool, M.B., Ch.B. 1928, U. Edin., who appeared before the Council for having been convicted (1) before the West Ham Police-court for failing to enter a purchase of cocaine in the dangerous drugs register, being fined £5; and (2) before the Hull City Police-court on five charges of procuring cocaine and morphine without being duly authorised to do so, being fined £20 and £5 12*s*. 6*d*. costs. Mr. Harper laid the facts before the Council, and Mr. Webster, giving evidence on his own behalf, said that in 1929, at the time of his first conviction, there had been a heavy influenza epidemic during which he had had very little sleep and had been suffering from duodenal ulcer; he had foolishly taken drugs to alleviate the pain. After the conviction he had entered hospital and had come out cured, and so well that he had been appointed medical officer to a unit of the Royal Air Force at Wendover. He had, however, been apprehended by order of the Home Office and his appointment had been ended. His offence at that time—which had not been brought before the Council—was merely that of obtaining grs. 4½ of morphine pills for patients whom he had been treating as the partner of another medical man, whom he had not told that his authority had been withdrawn. He had been persecuted by anonymous letters, and had felt a grievance against the authorities. He had committed the offences at Hull in order to gain publicity, but now realised that he had behaved unwisely. He denied that he was an addict.

The Council postponed judgment for a year subject to the usual provisos.

CHARGES OF ABUSE OF POSITION

The Case of David West, registered as of 1, Raynham-road, Hammersmith, W.6, M.B., Ch.B. 1924, U.Aberd., who had been summoned to appear before the Council on the following charge:—

> "That you abused your position as a medical man by misconducting yourself on numerous occasions from August, 1931, to January, 1933, with Mrs. A. B., who and whose husband and child were patients of yours, and that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was the husband of Mrs. A. B.

Mr. West was not present in answer to his notice, but was represented by Mr. F. C. Sills, solicitor. Mr. Sills said that Mr. West was dangerously ill and that he himself had only been instructed the day before and was not in a position to represent Mr. West. He asked for an adjournment until the summer session. The Council, however, would not grant his application, and he withdrew from the case.

Mr. Harper informed the Council that Mrs. A. B. had first become acquainted with Mr. West in August, 1931, when he had attended her for some stomach trouble. In November he had attended her small son, who was suffering from whooping-cough. He had then suggested that she should have a series of injections for anæmia, calling at his surgery and being visited on alternate days. He had become friendly and sympathetic; he had suggested that Mr. A. B. must have another woman and that Mrs. A. B.

should play the same game. On one occasion when he had suggested intimacy she had slapped his face, but on another occasion intimacy had taken place and had been repeated frequently until the middle of January, 1933, when she had admitted the relationship to her husband. She had been admitted to St. Mary Abbott's Hospital just before this date and had had a miscarriage. Mr. A. B. and the sister of Mrs. A. B., corroborated this evidence.

The Council ordered the Registrar to erase Mr. West's name from the Medical Register.

The Case of Charles Frederick Searle, M.C., registered as of Nanyuki, B.E. Africa, M.R.C.S. Eng. 1909, L.R.C.P. Lond. 1909, B.Chir. 1909, M.B. 1910, D.P.H. 1916, M.D. 1919, U.Camb., who had been summoned to appear before the Council on the following charge:—

> "That, being a registered medical practitioner, (*a*) you abused your position by enticing one Gwendoline Elsie Place, with whom you stood in professional relationship, and who was the wife of Johnnie Dover Place, to leave her husband's house and go away with you on July 11th, 1931, in respect of which on June 6th, 1932, at a trial before Mr. Justice Roche and a jury at Bury St. Edmunds, a verdict was given by the jury for the said Johnnie Dover Place with £500 damages, and judgment was duly entered by Mr. Justice Roche against you for that amount and costs; (*b*) you abused your position by eloping with the said Gwendoline Elsie Place in or about April, 1932, to Nanyuki, Kenya Colony, taking with you the only child of the Places', a girl of 9 years of age, and by now living with them there; and that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Johnnie Dover Place.

Mr. Searle was not present but was represented by Mr. Oswald Hempson, solicitor. The complainant was represented by Mr. Maurice O'Sullivan, counsel, instructed by Messrs. Peters, solicitors, of Cambridge. After deliberation in camera, the President announced that the Council had found the charges proved and had directed the Registrar to erase from the Register the name of Charles Frederick Searle.

CHARGE OF CANVASSING

The Case of Philip Henry, registered as of 6, Cavendish-place, W.1, L.R.C.P. Edin. 1926, L.R.C.S. Edin. 1926, L.R.F.P.S. Glasg. 1926, who had been summoned to appear before the Council on the following charge:—

> "1. That, being a registered medical practitioner, you have advertised your dental practice for the purpose of obtaining patients by exhibiting on your premises at 26 High-street, Brentwood: (*a*) in the windows of the first floor rooms a large white card with the words 'Philip Henry, Dental Surgeon, has removed from No. 22 High-street'; (*b*) on one window in large gilt letters 'Philip Henry, L.R.C.P., L.R.C.S., L.R.F.P. & S.G., L.D.S., Dental Surgeon'; (c) on two other windows in large gilt letters 'Dental Surgery'; (*d*) in a fourth window a white card with your name and 'Dental Surgery' in large letters; (*e*) over the entrance 'Entrance to Surgery' in very large letters. And that in relation thereto you have been guilty of infamous conduct in a professional respect. 2. That, being a registered medical practitioner, you have canvassed for the purpose of obtaining patients in respect of the dental practice carried on by you at 26, High-street, Brentwood, and in particular (*a*) on or about June 26th, 1933, canvassed Mrs. Petchey by means of a letter addressed to her by you with the heading and address of Philip Johnson; (*b*) on or about July 17th, 1933, again canvassed Mrs. Petchey by means of a letter addressed to her by you and accompanying which was a card notifying your change of address and the opening of your new dental surgery; (c) on or about July 18th, 1933, canvassed Mr. Edhouse by means of a card similar to that referred to in (*b*) sent to him through the post; and canvassed nine named persons by sending them similar cards, all of whom were at some previous time patients of Mr. Philip Johnson, L.D.S., a former employer of yours whose practice at 22 High-street, Brentwood, had been purchased by Mr. Thomas Leslie Grayson, L.D.S.R.C.S. Eng. And that in relation thereto you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Thomas Leslie Grayson, L.D.S.R.C.S. Eng.

Mr. Philip Henry was present and was accompanied by Mr. Thomas Carthew, counsel, instructed by Mr. H. Lipton, solicitor. The complainant was Mr. Thomas Leslie Grayson, who was represented by Mr. Oswald Hempson, solicitor.

Mr. Hempson said that Mr. Henry had been assistant to Mr. Johnson, who had had two surgeries, one at 22, High-street, Brentwood, and another in the Mile End-road. Mr. Henry had taken duty on alternate days at each of the two surgeries and had been allowed to display a plate at Brentwood. There had been some negotiations for the purchase of the practice by Mr. Henry, but they had fallen through because he was unable to raise the necessary money. In May, 1933, Mr. Grayson had purchased the Brentwood practice of Mr. Johnson, and Mr. Johnson had given the usual assurances not to practise in the neighbourhood. Mr. Grayson was 26 years of age, and this was his first venture in practice by himself. He had entered into possession on June 1st. Shortly after he had started, his attention had been drawn to certain activities a few doors off—namely, at 26, High-street, Brentwood—and he had found that Mr. Henry had set up practice there as a dental surgeon. On August 28th, 1933, Mr. Henry had written to the Registrar of the General Medical Council suggesting that he might have some illuminated signs. He already had in the windows of the first floor a large white card with the words "Philip Henry, Dental Surgeon, has removed from No. 22, High Street." This suggested, said Mr. Hempson, that it had been Mr. Henry's practice at No. 22. On one window were large gilt letters saying: "Philip Henry, L.R.C.P., L.R.C.S., L.R.F.P. & S.G., L.D.S., Dental Surgeon"; and in three other windows the words "Dental Surgery" in large gilt letters or on a card. Over the entrance were more large letters saying "Entrance to Surgery." Further, Mr. Henry had had 100 notices of change of address printed, at the top left corner of which were the words, "79, Harley-street, W.1. Welbeck 7474." Notice of change of address to 26, High-street, Brentwood, followed, together with Mr. Henry's degrees and the words in brackets, "late Johnson and Henry of 22, High-street." This, said Mr. Hempson, was direct misrepresentation. The card continued that Mr. Henry desired to announce that he had opened a new surgery as Mr. Johnson had disposed of his practice. In addition to these cards there were two letters on the printed notepaper of Mr. Johnson, over which was written in Mr. Henry's handwriting "Dr. Philip Henry." In the first letter, sent to a Mrs. Petchey, a former patient of Mr. Johnson's, respondent had said he supposed she knew that Mr. Johnson had left the Brentwood surgery and that another young man had their former rooms, but that he would be opening a practice shortly; that, of course, she could change her dentist if she wished at any time, and that he would be pleased to be of service. This implied, said Mr. Hempson, that he had taken over Mr. Johnson's practice and that Mr. Grayson was a young interloper who had come into their former rooms. The second letter, dated July 17th, accompanied the change of address card and said that Mr. Grayson had told Mr. Henry that Mrs. Petchey had continued treatment with him;

that Mr. Henry would advise her to do so if she were satisfied, as Mr. Grayson had taken over Mr. Johnson's practice and he, Mr. Henry, had taken rooms a few doors off. These were merely examples of the conduct of Mr. Henry, and Mr. Hempson said he could not imagine a case more worthy of censure.

Mr. Grayson was called by Mr. Hempson and testified to his statutory declaration, confirming the facts as set out in Mr. Hempson's opening address. Mr. Henry, he said, had been employed as an assistant on a weekly salary, and had never had any interest as a partner at Brentwood or elsewhere. He himself had never employed Mr. Henry. He was satisfied that the people who had been approached by Mr. Henry were former patients of Mr. Johnson's.

Cross-examined by Mr Carthew, Mr. Grayson said that Mr. Henry had called on him in a semi-social way two or three times, and about the third week in June had told him that he had decided to start practice on his own in Brentwood. Mr. Henry had said that he wanted to write to some patients and later said that he had written. Mr. Grayson could not remember exactly what he had said, but he had objected. There had been in the hall-way of the old practice a card saying "Johnson and Henry, Dental Surgeons." He admitted that the words "Entrance to Surgery" were in letters of the same size as a former notice "Entrance to Flat," but he could not agree with Mr. Carthew's suggestion that the offending notice in the window had been removed directly he complained; he said he had complained repeatedly and it had been up for a considerable time.

Examined by Mr. Carthew, Mr. Henry said that he had decided to open a surgery in Brentwood about the third week in June. He paid £75 per annum for the surgery and about £150 on equipping it. He had told Mr. Grayson that he was going to write to some patients and Mr. Grayson had given his consent to this action. He had only sent out 30 cards but had had to have 100 printed because that was the minimum that the printer would do. He had only sent them, with one exception, to patients who had asked for his address and whom he had attended himself. When Mr. Grayson had objected to the big card respondent had first cut off the offending sentence "has removed from 22, High-street" and had then removed the card altogether. The notice "Entrance to Surgery" had been adapted from a former notice "Entrance to Flat," and so the size of the letters was not of his choosing. He had put 79, Harley-street on his change of address card because at that time he had been negotiating for a room there, but pressure of other duties had prevented him from starting work at that address.

Cross-examined by Mr. Hempson, Mr. Henry said that a number of change of address cards had been destroyed or soiled and that he had sent out about half a dozen to personal friends with no professional connexion. He maintained that all the patients to whom he had written were under his treatment at the time of writing. Mr. Hempson asked him whether their visits would be recorded on their record cards, and he agreed that that was so.

Re-examined by Mr. Hempson, the complainant said that he had made his objection clear to the respondent but had been unable to stop him. Respondent had cut off the bottom of the card bearing the words "has removed from No. 22, High-street, Brentwood."

Mr. Philip Johnson, examined by Mr. Carthew, said that he had had a practice at 22, High-street, Brentwood, and also in the Mile End-road. Dr. Henry had been his assistant in both practices, and had considered partnership, but had finally decided that he could not afford it. His plate had been displayed separately, and the two men had chiefly had their own separate patients. Dr. Henry had not been under any bond of restraint not to practise in the neighbourhood after terminating his engagement with the witness. Cross-examined, he said that he had paid for the card bearing the inscription "Johnson and Henry, Dental Surgeons"; it had been made with his consent but not at his suggestion. If Dr. Henry had been able to raise the money, witness would have given him an option to purchase. The first serious intimation the witness had had that respondent was starting to practise in Brentwood had been just before he had left for his holiday. He had objected most strongly, considering that to do so would be against professional ethics. In reply to a member of the Council, witness said that respondent had not been bound by restrictive covenant because the arrangement was a purely temporary one, intended to last only until the respondent purchased a practice or a partnership. All the people who had received circulars were his (Mr. Johnson's) patients. In reply to a question by the Legal Assessor Mr. Henry admitted that there had been a lapse of several weeks between the time when he had finished assisting Mr. Johnson and the time when he had started on his own. He repeated, however, that the treatment of all the patients concerned had been incomplete.

Mr. Hempson then produced cards of record, and asked what Mr. Henry meant by "in the course of treatment," saying that the Council might draw its own conclusions as to the meaning in the case of a patient who had last been seen in February. On another card were written the words "fin. March 15th, 1933," and the account had been paid on the following day. Mr. Henry, however, maintained that this patient also was in the course of treatment, and that "fin." only meant a temporary finish in that case. Mr. Henry said that he had not tried any other printer when the first printer refused to take an order for less than 100 cards, because it suited his purpose to get the work done locally. Mr. Henry maintained that his change of address card had suggested that Mr. Grayson had taken over the practice, and that he had mentioned Mr. Grayson's name in the letters he had written to Mrs. Petchey and others. When Mr. Hempson read the letter out in full, he agreed that it was unfortunate that there was no mention of Mr. Grayson's name in it. He declared that Mr. Grayson had known from the first that there was a distinct possibility that he might set up in the neighbourhood, but he also said that at the time when Mr. Grayson bought the practice he had had no idea of setting up, but had subsequently been induced to do so by friends. He had settled so near to Mr. Grayson because that was the only available flat. He agreed that he was under restriction not to practise within half a mile of the Marble Arch, and that this covered about a third of the lower end of Harley-street, but No. 79 was outside this radius. He did not know until two or three days after his cards were printed that he would not be going on with the Harley-street arrangement. In reply to Mr. H. L. Eason, he said that he was solely in dental practice but not on the Dental Register, as he had no particular desire to be. He knew that persons on the Dental Register were under certain restrictions as to the size of letters and signs which did not apply to persons on the Medical Register, but he had not given the matter much thought. In reply to the Legal Assessor he agreed that his letter had been badly expressed and undoubtedly misleading when he had put the words "late of Johnson and Henry, of 22, High-street"; he had not been a partner at any time and could not have been.

In reply to Sir Robert Bolam, now presiding in the temporary absence of the President, he said that he was not familiar with the warning notice of the Dental Board.

Mr. Carthew, addressing the Council on Mr. Henry's behalf, stressed as a novel aspect of the case that what had been done had not been done behind the complainant's back. He described Mr. Henry as an intensely stupid young man. Mr. Hempson in his concluding address said that he did not wish to press the case unduly but he thought Mr. Henry's explanations had been totally inadequate and inconsistent in the extreme.

After deliberation the President announced that the Council had found the charges proved, that they considered Mr. Henry to have been guilty of infamous conduct in a professional respect, and that the Registrar had been directed to erase his name from the Register.

(*To be concluded*)

MEDICINE AND THE LAW

"Governing Facts" in the Nursing-home Appeal

It was remarked in this column last week that the judgment in Powell *v.* Streatham Manor Nursing Home was of great legal interest, since the case was virtually an appeal upon facts. It was an appeal from a judge sitting without a jury. Order 59 of the Rules of the Supreme Court declares that such an appeal is a re-hearing. It has long been an established principle that the appellate tribunal will not overrule the trial judge on a question of fact when he has had the advantage of seeing the witnesses and observing their demeanour. There are nevertheless some observations of Lord Lindley which suggest that the Court of Appeal may differ from the trial judge "even on a question of fact turning on the credibility of witnesses whom the Court has not seen." The Court of Appeal may also interfere if they find, in a phrase of Lord Justice James, "some governing fact which in relation to others has created a wrong impression." The Master of the Rolls declared that Mrs. Powell's discredited allegation about the hernia was such a "governing fact." Lord Justice Slesser found two such "governing facts": one was "the complete unreliability, to put it no higher, of the plaintiff's own doctor who performed the operation"; the other was the fact that the trial judge, he thought, had not considered how in so many particulars Mrs. Powell's evidence on other matters disconnected with her operation was disproved by the contemporary reports made by the nurses. The Lord Justice found it incredible that Nurse A could have mistaken the urethra for the vagina, and could have been guilty of what was not only brutality and cruelty but actually also criminal assault. Lord Justice Romer said there was about Mrs. Powell's evidence a "glaring improbability" which induced him to decline to accept it. Needless to say, all three members of the court differed with reluctance from the conclusions of so careful and experienced a judge as Mr. Justice Horridge.

In the past the advisers of medical practitioners and others faced with allegations of professional negligence have been frankly anxious about the natural sympathy of a jury with an injured plaintiff. A plaintiff's case, skilfully opened, must make a strong impression upon the sentiments of jurors, and it is often hard for the defence to focus the jury's attention upon nice shades of legal liability. At the moment British justice in civil cases is swinging away from the use of juries. A jury trial takes much longer than a non-jury trial and is therefore more expensive both to the country and to the litigants. A judge who has to decide issues of fact single-handed, however, is occasionally in difficulty for want of a jury to take the responsibility of decision. It is possible that he is aware of the difference between the view he himself takes of the facts and the view which he believes a jury would have taken. Be that as it may, if the Court of Appeal's judgment of last month is not upset, it is reassuring to professional men to find that an adverse decision on the facts in the court of first instance is not necessarily final. The Streatham Manor Nursing Home may be congratulated both on the vindication of its good name and on the excellent legal advice which secured the vitally important reconsideration of the evidence.

The Medicated Truth

The *Times* New York correspondent, in a message published on Nov. 25th, reported that the Chicago police claimed to have secured a confession in the Chicago surgery murder case by the use of a "lie-detector." The body of Mrs. Rheta Wynekoop, aged 22, is said to have been found on an operating-table in the house which she and her husband shared with her husband's mother, Dr. Alice Wynekoop. The husband and his mother are stated to have been subjected to all-night ordeals of questioning by the police, the "lie-detector" being apparently the use of scopolamin; as the result Dr. Alice Wynekoop is said to have confessed that she committed the murder. The method presumably relies upon the drug to lower the resistance and the reasoning power of the examinee; the patient is safely delivered of the truth in a condition of twilight sleep. American criminologists have had the method under consideration for many years (THE LANCET, 1922, ii., 1082, 1190). Five years ago we referred (1928, ii., 990) to a police investigation at Hawaii, where a suspect made a confession after a heavy injection of hyoscine hydrobromide. When the effect of the drug wore off he retracted his admissions and asserted his innocence as vigorously as before. While attempts were being made to drug him into a fresh confession the real murderer was fortunately discovered elsewhere. Our brief note on the case was reprinted in an Appendix to the report of the Royal Commission on Police Powers and Procedure. The Commission reported that there was no evidence that the use of "third degree" methods by our own police either existed or would be tolerated by the police themselves. Our judges are vigilant to exclude any statement by an accused person which is not genuinely voluntary. Thus the Court of Criminal Appeal lately quashed a conviction which had been obtained on evidence partly resulting from police inquiries. During these inquiries the police had said "we are policemen and we want to know"; the Court said this might have been construed as a threat, and the resultant statements were consequently not voluntary and therefore not admissible.

Evidence of Blood-groups at Murder Trial

Although research into the characteristics and classification of blood-groups has established certain conclusions, its results have not yet been of decisive value for the purpose of determining disputed matters in our courts of law. The limits of expert evidence in this field were shown by a recent murder trial at Manchester assizes (R. *v.* Loughnan). The accused was convicted of murdering his wife. Her body had suffered severe injuries, five ribs having been broken. Blood-stains were found in her bedroom and in the room where the husband slept; there were also stains on his trousers. His defence was that he was asleep throughout the time when the injuries must have been inflicted; it was suggested that they might have been caused by the woman falling down stairs. Dr. G. Roche Lynch gave evidence that there were four distinct blood-groups. The dead woman's blood definitely belonged to group 4; the stains on her husband's trousers were also probably in group 4. Dr. Lynch could not be positive on the latter point, the tests being the less satisfactory because the clothes were very dirty. The blood-stains on the floor were proved to have been human blood, but not enough was available to determine the group. Cross-examined by the defendant's counsel, Dr. Lynch said about 42 per cent. of human beings came within group 4. He agreed that it was reasonably probable that the accused's own blood came within that group, but it was obviously impossible to answer this question definitely for want of knowing the group to which the man belonged. Presumably, if it had been possible to state with confidence that the blood-stains belonged to the husband's group and not to the wife's, the Crown would have disclosed the fact as an element telling in the accused's favour. In the circumstances the actual evidence of blood-groups had some small weight in corroborating the Crown case, but the jury could hardly pay much attention to it. The value of expert evidence in this respect is necessarily limited by the fact that an accused person cannot be compelled to submit to a blood test.

PARIS

(FROM OUR OWN CORRESPONDENT)

SYPHILIS IN FRANCE

THE Assises Nationales de l'Assemblée Française de Médecine Générale, in session on Nov. 5th at the Hôtel Dieu, dealt with the findings of the collective researches, conducted by general practitioners throughout France, into the frequency and certain other aspects of syphilis. These findings, epitomised by Dr. Godlewski, the secretary-general, show that during the first five years after the war there was a recrudescence of the disease. There followed a rather sudden decline in 1925 and 1926, maintained till 1929. At present a stationary phase has been reached, with a most striking difference in the incidence of the disease in town and country, the towns being the reservoir of the disease. The chancre has become rare. In women it is usually overlooked, and a rash is the first sign of their infection. General paralysis would seem to be as common as it was, whereas tabes has become a much less serious problem, and the number of advanced cases of this condition has fallen almost to vanishing point. On the other hand the incidence of visceral lesions is high, and involvement of the aorta is most frequent. Remarkable unanimity of opinion was shown in the condemnation of clandestine prostitution as a most powerful factor in the genesis of syphilis; it was held responsible for about two-thirds of all the cases. Prostitution under official medical supervision was accounted a less serious source of new cases by speakers at this meeting, but there are many experts who regard the precautions taken against venereal disease in the conduct of regulated prostitution of doubtful value. There was support at the meeting for the abandonment of the term "hereditary syphilis" in favour of "congenital syphilis."

THE FRENCH TUBERCULOSIS SERVICE

In a foreword issued in advance of the third edition of the "Armement Antituberculeux Français," which will be published early in 1934, Prof. Léon Bernard and Dr. G. Poix give some statistical facts concerning the French tuberculosis service. There are at present only 75 specialists in tuberculosis attached to the 262 dispensaries scattered throughout 49 departments. The work is done in the other dispensaries by 53 medical officers of health and 500 general practitioners with no special knowledge of tuberculosis. Till recently it was difficult to staff these dispensaries with properly qualified nurses. Now, however, 23 different schools of nursing admit every year about 1000 probationers whose ambition is a State diploma, and the number of visiting nurses attached to the tuberculosis dispensaries is now over 1350. Experience has shown that it is well for these nurses to be general-trained, for if they are supposed to be concerned only with tuberculosis their visits may inflict an undesirable stigma on the families visited. Since the war 156 public and private sanatoriums have been provided with a total of 21,000 beds to which may be added 6700 beds belonging to hospital services in the towns.

ATTACKS BY IRRESPONSIBLE PATIENTS

A medical practitioner, writing recently in *Concours Médical*, asks if he cannot secure some material compensation for the damage inflicted on him by a pugilistic patient. A tired business man was being treated by him with a series of intramuscular injections; one had just been given by the doctor who was still holding a bottle of tincture of iodine, when he received a violent blow on the nose which made him fall backwards, freely splashed with iodine and with a double fracture of the bones of the nose. What damages could he claim? The admission which accompanied this question answers it. The doctor had promptly certified his patient as insane, signing an admission order himself and asking a colleague to provide a second certificate, and had thus effectively robbed himself of whatever vestige of a chance he might have had of a successful action for damages.

OVERCROWDING OF THE MEDICAL PROFESSION

Recent statistical returns show how greatly the ranks of the medical profession are becoming congested. In 1876 there were only 10,000 doctors, or an average of one to 3400 inhabitants. Now there are 36,000, a ratio of one to 1600. In Paris this ratio is as high as one to 630. The only French territory understaffed by doctors is French Africa, whose population of 45 millions is served by 786 doctors, 450 of whom are civilians.

AUSTRALASIA

(FROM OUR OWN CORRESPONDENT)

A VOLUNTARY INSURANCE SCHEME

SOME months ago the Government of Victoria appointed a committee to confer with the Cabinet on the urgent matter of maintaining the Melbourne metropolitan hospitals on the existing scale. Two of the chief problems are the increased use of public hospitals by those who are not fit subjects for charitable aid and the demand upon beds made nowadays by motor accident cases. The criticism has been made in the public press that while some of the reasons why people who are not indigent seek public hospital treatment may not be admirable, they are nevertheless comprehensible. Those who complain of the exploitation of hospitals should consider to what extent the present difficulties arise out of their failure to provide for patients who, though not indigent, are unable to pay medical fees on a scale appropriate to the rich.

The Government has now announced that its committee has failed to agree upon a policy and that the problem will stand aside for a year until a satisfactory solution is found. And it is appropriate that at this juncture a voluntary medical and hospital insurance scheme has been brought forward by the Victorian branch of the British Medical Association and the Colonial Mutual Life Assurance Society, Ltd. The proposals embrace contributors between the ages of 15 and 59, and the arrangements are made in the first place for four years only, after which they may be modified. The B.M.A.'s principal contribution to the plan is an agreement that its members shall charge only an agreed intermediate scale of fees for medical attendance, operations, and treatment. No profits will be taken from the scheme, which will be administered as cheaply as possible and kept separate from the remainder of the Society's business. If it is found that a profit is being made, the benefits will be increased, the premiums reduced, or the services improved at hospitals where contributors are treated. Premiums will be paid in the ordinary way and there will be no automatic deductions from wages or salaries. The insurance is strictly individual and will not cover the insured's wife or family; the benefits are limited to thirteen weeks. A contribution of 1s. a week insures for weekly hospital fees of £3 3s., weekly physician's fee of £1 11s. 6d., major operation fee of £10 10s., minor operation fee of £3 3s., operating theatre fee 10s. 6d., anæsthetic fee 10s. 6d., radiologist's fee 10s. 6d., and pathologist's fee 10s. 6d. A contribution of 6d. or 9d. a week may be made with a corresponding decrease in benefits. The benefit figures do not represent the fees for services rendered but must be regarded merely as a contribution to such costs.

The Premier of Victoria has expressed his approval of the scheme but holds that if it is to be completely successful it should be compulsory. It was upon this very problem that the Ministry found sharp difference of opinion in its discussions on hospital policy. He also disagrees with the suggestion that there should be a general tax for hospital maintenance; for if a tax of this kind were imposed, all sections of the community should have the right of treatment in the public hospitals.

I have already given details of a somewhat similar insurance scheme instituted in New South Wales as an expedient to assist hospital finance.[1] It has been in operation for some time and differs mainly from the Victorian scheme in that the insurance covers wife and children, the period of insurance is twelve weeks in any one year, and the contributions are 6d. a week. The benefits also differ in a number of details. There are now almost 75,000 contributors, and the income for the past fifteen months has exceeded £46,000, of which £36,000 has been distributed to hospitals.

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[1] THE LANCET, 1932, i., 101.

HARROW AND WEALDSTONE HOSPITAL.—The General Nursing Council has approved of this hospital as a complete school for nurses.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt. F. W. Besley to be Surg. Lt.-Comdr.

The following appointments have been made: Surg Lt.-Comdr. R. A. Graff to *Sutton*.

Surg. Lts. S. R. G. Pimm to *York* and to *President*, for course; J. E. Davenport to *Malaya*; and G. H. G. Southwell-Sander to *Cornwall*.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lts. G. A. Mason and T. C. Stevenson to be Surg. Lt.-Comdrs.

Surg. Lt. (D) G. R. D. Hankinson to be Surg. Lt.-Comdr. (D).

ARMY MEDICAL SERVICES

Majs. G. Wilson, R.A.M.C., and W. L. E. Reynolds, R.A.M.C., *to be Dep. Asst. Dirs.-Gen.*

ROYAL ARMY MEDICAL CORPS

Lt.-Col. C. F. White retires on retd. pay.

Maj. S. S. Dykes to be Lt.-Col.

Lt. W. G. Kingston resigns his commn.

ARMY DENTAL CORPS

Capt. F. W. Burke to be Maj.

TERRITORIAL ARMY

Maj. D. P. H. Gardiner, having attained the age-limit, retires and retains his rank, *with permission to wear* the prescribed uniform.

Lts. W. H. Dowell, P. Malpas, and G. M. *Frizell to* be Capts.

J. Peter *(late Cadet, Glasgow Univ. Contgt., Sen.* Div., O.T.C.) to be Lt.

The Territorial Decoration has been conferred upon Maj. I. J. *Williams.*

INDIAN MEDICAL SERVICE

Col. A. W. M. Harvey has been appointed Hon. Surg. to The King, vice Bt.-Col. J. McPherson, who has relinquished the appointment on retirement.

The undermentioned officers retire: Maj.-Gen. Sir John W. D. Megaw and Col. F. E. Wilson.

QUEEN MARY'S HOSPITAL FOR THE EAST END.—At the annual dinner in aid of the funds of this hospital last week it was stated that it serves a population of 2,000,000 and costs £50,000 a year to maintain. There are nearly 300 beds, but 500 are urgently needed. Every year 1000 babies are born there, and the war memorial out-patients' department is attended by 170,000 people annually.

A MANCHESTER "MIDDLE-CLASS HOSPITAL."—The board of Manchester Royal Infirmary has launched a scheme to provide a "middle-class hospital" within the infirmary grounds. At a cost of £95,000 there will be 100 beds, with operating theatres, waiting and visitors' rooms, and special kitchens. Patients will pay from four to ten guineas a week. Bedrooms are planned instead of wards; the four-guinea beds will be in four-bed rooms, with curtained divisions; there will be a few two-bed rooms, and all the rest will be single rooms. More than half the beds will be at prices not exceeding six guineas a week, and medical fees will be adjusted to the needs of each case. All the advantages of the laboratories, X ray, and other departments of the infirmary will be available to the patients. The building will not be started until the whole of the cost is in hand. The money is to be raised by gifts and by loans bearing 4 per cent. interest, but the interest will not begin to be payable until July 1st, 1935, to allow time for the erection of the building, which will occupy the site of the old Christie Cancer Hospital adjoining the infirmary. It is calculated that the hospital will pay its way, provide the interest on the loans, and produce a sinking fund permitting the redemption of the loan in 25 years. The loan certificates will be for denominations between £10 and £1000.

PUBLIC HEALTH SERVICES

The L.C.C. Hospital Service

THE central public health committee reported on Tuesday to the London County Council on the work of coördinating the hospital and allied medical services transferred to the council from the poor-law authorities. These services are now responsible throughout the County of London for the treatment of the sick poor in hospital, for the district domiciliary visiting, and for the institutional care of children under 3 years of age deprived of parental care. The powers and duties of the committee include the provision, classification, and management of hospitals, their visitation and inspection, consultation with representatives of the voluntary hospitals, laboratory services, and the training of nurses and midwives. There are, in all, 74 hospitals with a staff totalling some 18,000 persons. The report estimates the annual cost of maintenance to be not far short of £4,500,000, while large sums have been spent during the three years in structural developments to which the following paragraph gives a clue :—

> One new convalescent hospital at Sidcup (500 beds) has been acquired, and another at Tooting (320 beds) reopened. At about 30 hospitals major schemes of extension, enlargement, or improvement (including better accommodation for nurses), some prepared by the late authorities, have been completed or are in process of being carried out. At Hammersmith hospital the extensions and alterations are part of the scheme for the British Post-Graduate Medical School to be established at the hospital. All the hospitals (except one for chronic sick, the allocated institutions and the two epileptic colonies) have been appropriated and taken out of the poor-law. Accommodation in the institutions, suitable only for healthy inmates, is being gradually converted for the reception of hospital patients. Accommodation for maternity cases has been extended (112 additional beds) and improved, and arrangements have been made for antenatal attendances at all the general hospitals at which there are maternity wards. Reorganisation of the observation wards (for mental cases) is taking place. Auxiliary services (laundries and kitchens, &c.) have been improved at practically all the hospitals, and a great number of other structural improvements of all kinds have been effected. A comprehensive modern pathological laboratory service has been established and made available for all the hospitals, and a complete consultant and specialist service has also been organised for the hospitals. The transferred ambulance services have been combined with the street accident ambulance service operated, since its inception, by the Council, and the combined service has been strengthened in material and facilities for ready summoning. The district medical service has been reorganised, subject to further review in two years' time, and greater use is being made of the voluntary district nursing services in London.

The magnitude of the work has led to the appointment of four central subcommittees : (1) hospital management, (2) planning and development, (3) staff, and (4) public health (general)—the last of which deals with the original public health powers possessed by the Council, and is, for the time being, responsible for the ambulance service. All four subcommittees have extensive delegatory powers of administration and expenditure. When the municipal hospital service for London was taken over from the old authorities, of which there were 26, the bed accommodation on transfer was estimated as about 40,000, of which one-quarter were in institutions which could not be regarded as suitable for modern treatment of the sick. Accommodation for healthy inmates has been reduced by about 1100 beds, and when the structural works are completed there will be a net increase since April, 1930, of more than 1400 beds, 500 of them being at Queen Mary's convalescent hospital, Sidcup.

The transferred hospitals, general and special, have mostly been appropriated to the reception of the sick, under the powers conferred by the Local Government Act, 1929, the statutory obligation being to provide medical treatment, as relief, for the poor. The effect of the appropriation is that persons are now being admitted to the hospitals as municipal and not as poor-law patients. Out-patients are treated at the appropriated hospitals in the following cases : (1) accidents, (2) continuation treatment, (3) antenatal and postnatal treatment, and (4) consultation and treatment in special cases. The arrangements conform, as far as possible, to the recommendations of a committee of the King's Fund that non-urgent minor cases should be treated by the general practitioner.

In the transferred general hospitals the accommodation for acute sick has been generally speaking fully occupied, while the acquisition of Sidcup and the reopening of St. Benedict's (Tooting) have relieved the pressure, these two hospitals having 820 convalescent beds between them. Special attention has been paid to maternity work in all the hospitals, maternity accommodation at six of them having been improved. Live births in the L.C.C. hospitals have increased in the last three years by over 2300 ; during 1932 more than one-sixth of the births in London (that is 10,974 out of 62,233) took place in these maternity wards.

The report deals with the results of the council's tuberculosis scheme, with the arrangements for the more efficient and economical treatment of venereal disease, and with dental and radiological equipment, while an interesting note states that a complete survey of the mental observation wards has been made. At the time of the transfer, 19 hospitals and institutions provided accommodation for 561 of these patients ; for these small units larger ones, giving better opportunities for observation, are being substituted. Improvements are announced in the amenities for patients. Equipment of the kitchens has been improved. Dietaries are better and more varied. Clothing, when supplied, is in a brighter and more pleasing style, personal appearance—particularly in the case of ambulant patients—being found to have a beneficial effect on progress.

A large section of the report is taken up with a description of the work which has been necessary to bring the transferred buildings up to the proper standard for hospital purposes. Particulars are given of structural schemes carried out in 34 hospitals, the sum of money actually expended in each case being stated and their total agreeing with the figures given in the preliminary statement.

The report concludes with a recital of the uniform scales and conditions settled for the different categories of staff.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 25th, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 6 (last week 1); scarlet fever, 4159; diphtheria, 1303 ; enteric fever, 33 ; acute pneumonia (primary or influenzal), 1037 ; puerperal fever, 34 ; puerperal pyrexia, 105 ; cerebro-spinal fever, 29 ; acute poliomyelitis, 10 ; encephalitis lethargica, 4 ; dysentery, 8 ; ophthalmia neonatorum, 83. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 28th–29th was as follows : Small-pox, 8 under treatment (last week 2 under treatment, 3 under observation) ; scarlet fever, 3294 ; diphtheria, 2141 ; enteric fever, 23 ; measles, 447 ; whooping-cough, 161 ; puerperal fever, 18 mothers (plus 3 babies) ; encephalitis lethargica, 254 ; poliomyelitis, 3 ; "other diseases," 208. At St. Margaret's Hospital there were 11 babies (plus 7 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox or enteric fever, 22 (5) from measles, 12 (0) from scarlet fever, 7 (0) from whooping-cough, 44 (8) from diphtheria, 51 (17) from diarrhœa and enteritis under two years, and 58 (15) from influenza. The figures in parentheses are those for London itself.

Liverpool reported 3 deaths from measles, Bolton and Leeds each 2. Three fatal cases of scarlet fever occurred at Birmingham, 2 each at Liverpool and Newcastle-upon-Tyne. Of the deaths from diphtheria 4 were reported from Leeds, 3 each from Huddersfield and Liverpool. Seven deaths at Manchester were attributed to influenza, 4 at Birmingham, 3 at Salford. It is now reported that in October last, small-pox was mentioned as a cause of death in a case assigned to Mansfield-Woodhouse U.D. (Notts).

The number of stillbirths notified during the week was 255 (corresponding to a rate of 47 per 1000 total births), including 45 in London.

PANEL AND CONTRACT PRACTICE

Ambiguous Regulations

ON April 19th last an insured person called for treatment at a practitioner's surgery but found it closed and could obtain no answer. The information thus given to the insurance committee was verified by an officer of the committee who, upon calling, could obtain no answer on ringing the bell at the surgery door. A notice had been placed inside the door to the effect that the surgery was closed until Friday, April 21st, and another notice could be seen hanging in the waiting-room to the effect that during Easter the surgery would be closed from 1 P.M. on Thursday, April 13th, until 11 A.M. on Friday, April 21st. In view of the fact that no notification had been received of the practitioner's proposal to be absent from his practice, a communication was addressed to him and, in reply, he stated he was not aware that notification of his absence was necessary. In a subsequent letter he stated that he was away from his practice for a week, and that he left no deputy, knowing that he had no patients requiring treatment at the time and believing that a hospital could deal with emergencies. He stated further that he was under the impression that the rules provided for a week's absence, and that a locum tenens was only required when the absence exceeded this. It seems that the practitioner had been for some time past in poor health and felt it necessary to take a short holiday. Towards Easter work being slack he thought that, having exhibited a notice of his intention in the waiting-room, he could be away for a week without making arrangements for carrying on his practice.

Clause 11 (2) of the terms of service provides as follows :—

> "A practitioner shall inform the Committee of the nature of any standing arrangements which he has made with any other practitioner or practitioners for securing the treatment of his patients in cases where he is unable, for any of the causes mentioned above (Clause 11 (1)), to give treatment personally, and shall not absent himself from his practice for more than one week without first informing the Committee of his proposed absence and of the person or persons responsible for conducting his insurance practice during such absence."

It might be thought upon a cursory reading of this clause, isolated from the rest of the terms of service, that a practitioner would be justified in absenting himself for a week without giving notice to the committee or making arrangements for the carrying on of his practice ; but it is surely fundamental that patients should not be left without the necessary provision for their medical attendance and treatment. It is true that it is nowhere provided that if a practitioner is absent from his practice for less than a week he shall provide the services of a deputy, but it is inherent in several of the terms of service. Clause 9 (3) requires a practitioner to attend and treat insured persons at the places, on the days, and at the hours arranged to the satisfaction of the committee. Clause 9 (5) requires a practitioner to visit and treat any patient whose condition so requires. Clause 11 (1) requires that excepting in the case of partners and assistants, all treatment shall be given by a practitioner personally, except where he is prevented from so doing by one of the reasons stated in the clause.

As a result of these rules and arguments, the medical service subcommittee came to the conclusion that a practitioner should not absent himself from his practice without any proper arrangements for the treatment of his patients. As, however, the practitioner was thought to be genuinely under a misapprehension it was decided not to take action as though his failure had been wilful. The committee asked for £5 to be withheld owing to his failure to comply with the terms of service. The practitioner protested to the Minister in a letter in the course of which he said :—

> "Had the regulations been devoid of ambiguity the breach could not have occurred. The insurance committee held that a consideration of the various rules would have shown that my interpretation was wrong. I agree. But it is easy for a doctor scanning these regulations to focus his attention on the paragraph which implies that a doctor may leave his practice for a week, by stating positively that he may not do so for more than a week without substituting a locum tenens."

This argument produced the desired effect at Whitehall for a letter was received saying :—

> "The Minister appreciates the possibility that a practitioner might misconceive the intention of the terms of service in the manner indicated in the paragraph referred to, and he proposed to consider whether the wording of the terms of service should be altered in due course to remove any possible ambiguity. In the circumstances, while the Minister appreciates the reasons for which the Committee have recommended the withholding of remuneration from the practitioner, it appears to him that a warning letter to the doctor from the Department might be adequate to the needs of the case in lieu of the deduction of the money."

The Minister added that he would be glad to consider any observations from the committee, but the full insurance committee to which the matter was referred had none to offer.

CORRESPONDENCE

A CHRISTMAS APPEAL

To the Editor of THE LANCET

SIR,—Publicity to my appeal for the Christmas gift fund of the Royal Medical Benevolent Fund was very kindly accorded in your issue of Nov. 18th. I acknowledge, very gratefully, the sum of £300 already received. This will suffice to enable us to deal with our annuitants. We still require £300 in order that the most deserving of our grantees shall receive a Christmas gift of 30s. each. May I ask all who can to help now. There is still time to send a donation to the hon. treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, London, W.1.

I am, Sir, yours faithfully,
THOS. BARLOW,
Dec. 1st, 1933. President.

THE B.P.A. AND GENERAL PRACTITIONER TREATMENT

To the Editor of THE LANCET

SIR,—The leading article in your issue of Nov. 25th, in which you described the aims of the British Provident Association, has naturally drawn inquiries as to why the Association does not include among its benefits fees for general practitioner treatment. Perhaps you will allow me as a member of the executive of the Association to explain.

The B.P.A. was faced with a problem of considerable complexity. The fact that the great insurance corporations have never tackled the problem, or have only done it in a very half-hearted way, was a proof of that, and yet we felt that the experiment ought to be made. It would have been fatal if we had promised benefits that we later found ourselves unable to provide, and almost as bad if we had laid down for a complete service premiums which would have given us a safe margin, but would have been so heavy as to damn the movement from the beginning. We therefore tackled the most urgent part of the problem which is that of meeting the bill for a serious operation or dangerous illness requiring institutional treatment. We have proved that our scheme is actuarially sound, and our members renew in a proportion which is the envy of the ordinary insurance company. It must be remembered that from the actuarial point of view it is much easier to calculate the risks of claims being made for surgical operations and institutional treatment than for ordinary medical attendance on the middle classes. For this last item figures on which calculations could be based are very difficult to get.

If the scheme is supported as it ought to be we shall be encouraged to go further. But I feel sure that any medical practitioner who considers the scheme carefully will realise that in recommending it to his patients he is not only contributing to their sense of security and peace of mind, but he is making it easier for them to meet the bills for that part of the service for which the general practitioner is responsible. I am, Sir, yours faithfully,

Half Moon-street, W., Nov. 30th, 1933. ALFRED COX.

DIET AND WEIGHT

To the Editor of THE LANCET

SIR,—Dr. Howard has suggested an interesting view as regards diet and weight, but I should like to ask him whether he has ever seen, or knows anyone who has seen, a healthy, athletic man or woman over the age of 75 who presents anything but a spare or "wiry" picture as regards his bodily appearance? By athletic, I mean a man who can still ride to hounds, or play tennis, or have a day's shooting.

I am, Sir, yours faithfully,
HENRY W. HALES, M.D. Camb.
Portland-place, W., Dec. 1st, 1933.

THE PSYCHOLOGY OF PERSONAL INFLUENCE

To the Editor of THE LANCET

SIR,—As professional antagonism to "suggestion" depends mainly on a misunderstanding of the word, Dr. William Brown is to be thanked for his address on the Psychology of Personal Influence published in THE LANCET of Nov. 25th (p. 1191). An exposure of the inadequacy, futility, and even falsity of the views on suggestion of Freud, Jones, and McDougall has been long overdue.

Dr. W. Brown does not, however, carry the discussion far enough. "Congruence of the unconscious of the hypnotist and that of the hypnotised—deep calling unto deep," "agreement in the realm of the unconscious" are not self-explanatory statements, and do not cover the use of "suggestion" as a formal procedure. The operator desires to produce inner thinking in the subject approximately congruent to what is his, the operator's *intention;* congruence to his own inner thinking the operator does not desire. A man may by suggestion save others and yet "be himself a castaway."

I understand "unconscious" in about 19 different senses; in what sense does Dr. W. Brown use the word? May I take it, in the metaphorical language of Boehme, as "a dumb essence; a prepared instrument of music upon which the will's spirit plays; what strings he touches, they sound according to their property." It is this "prepared instrument" to which one applies suggestion. Dr. W. Brown is right, in that a common nature, a common degree, however small, of general or specific emotivity in operator and subject must be assumed; only sympathetic insight can give power to employ suggestion. As Boehme adds: "I may understand him really and fundamentally, be it either spoken or written, if he has the hammer that can strike my bell."

This inner likeness, however, is not suggestion, but the platform for its display; its discernment in particulars is the means whereby the subject selects the operator best fitted to move him, and is the ground of the operator's intuitive or intelligent selection of the most moving suggestions. Suggestion as an inner process is not always "deep calling unto deep"; it is more generally "deep" answering to one skilled or moved to plumb it. It is a stirring of inner inbred impulse in automatic response to another person's often cool procedure.

In using "suggestion" we have, firstly, to reckon with an innate characteristic of the intelligent subject, described by one observer as a psychological law—viz., (*a*) that when reduction to *automatic* conviction is definitely obtained, then the subject tends to accept other truisms; and (*b*) a falsehood causes the receiver *automatically* to desire no more falsehoods. That is to say, in other words a truth apprehended engenders faith; a falsehood detected destroys suggestibility. Faith, scepticism, the tendency to "the right and reasonable as such," the "power of personality" are largely resumed in this "law." Secondly, suggestive procedure depends upon the operator's intuition, or knowledge gained by trial and error, of the automatic responses naturally made by human beings and animals to given circumstances, and to the tones, words, gestures, and acts of man. Thirdly, suggestion is a purposeful procedure. It is the *selective* stimulation of favourable emotional dispositions so as to produce a reflex concentration of attention such that *chosen* ideas shall inhibit others.

Suggestion is to psychotherapy what the art of teaching is to education. Suggestion as a process, which includes auto-suggestion, means any automatic reaction or reflex mechanism of the mind—e.g., one word suggests another. Auto-suggestion has also the meaning of an explicit or implicit purposive use of one's own reflex mental mechanisms. Suggestion as a mode of communication means a form or procedure *calculated* to produce, reflexly, inner thinking in the subject approximately congruent to the intention—e.g., a dog gripped my thigh in its jaws: I stood still and relaxed my thigh muscles. Stiffness would have suggested fight or flight; stillness and relaxation suggested harmlessness; the dog did not bite in, and was readily called off by the householder. *Pace* Prof. McDougall, I "stooped to conquer."

From these definitions it follows that in suggestive treatment there is both hetero- and auto-suggestion. What the operator wills is hetero-suggestion, what the subject deduces emotionally without the intention of the operator is auto-suggestion. If I yawn and an onlooker yawns it may be auto-suggestion, a mental reflex; if I yawn to make him yawn it is suggestion. Hypnosis, by the way, is not strictly a state of enhanced credulity, but a state of enhanced obedient attentiveness to given things.

I am, Sir, yours faithfully,
W. THOMSON BROWN, M.B.

Brisbane-road, Ilford, Dec. 2nd, 1933.

THE CONSULTANTS' PANEL

To the Editor of THE LANCET

SIR,—The inadequate representation of whole-time consultants and specialists in the counsels of the British Medical Association has facilitated the production of the scheme for a list of consultants with which the Association is presenting to us in the provinces. Consultants are unorganised and are, for the most part, politically inarticulate. The Association has hitherto provided a useful platform for technical propaganda and education, but it is now apparent that some machinery must be elaborated, if not within then without the Association, for the protection of our interests.

The present whirlwind campaign being conducted by the secretarial staff has taken many of us by surprise, especially those, as one speaker at last night's meeting in this city put it, "who peruse only those parts of the journal occupied by scientific and pseudo-scientific papers." It was proposed to decide this vital matter by a postal vote to be held within the next few days; fortunately, however, the meeting, resenting the short notice, dealt with this proposal in no uncertain manner. Accordingly the referendum has been postponed until the end of the first week in January. The Association for this occasion recognises and enfranchises persons who are divisible into two groups: the first is composed of whole-time consultants or specialists, whilst the second, and larger, consists of part-time practitioner consultants. The proposed reduction of the consultation fee will affect principally the whole-time consultants. One speaker at the meeting referred to stated that 42 per cent. of the patients consulting him during the past year would have been within the scope of this scheme; a simple calculation demonstrated the extra work which would have to flow into his consulting-rooms to maintain his present income. It is unlikely that the scheme proposed could produce this flow. The practitioner consultants, by their numerical preponderance, are likely to be the deciding factor in the referendum. The position is extraordinary, as it is unlikely that, with the exception of an occasional gala day, their remuneration for a consultation amounts even to one guinea; they have nothing to lose and appear to be wholeheartedly in favour of the scheme. These remarks do not apply, of course, to those estimable practitioner consultants who function in regions where whole-time consulting work is not an economic proposition.

Practitioners on the present panel of the State Medical Insurance will, of course, not be eligible to participate in the scheme, as legally they are debarred from receiving remuneration from insured persons. The practitioner consultant is subsidised in his consulting work, even in his junior days, by his private practice. The whole-time consultant has no such financial foundation to rely upon, so the former should either be debarred, or refrain, from voting away the latter's future. Similarly, it is not unreasonable to expect whole-time consultants over 55 years of age to give their advice but to leave the decision in this vital matter to their junior colleagues, as it is the latter who will have to suffer or benefit from the scheme.

At the meeting alluded to, the opinion was expressed freely that consultants, on the general practitioners' advice, have always met hardship with consideration and charged a reduced consultation fee. Is not this confidential basis preferable to the cast-iron scheme which is suggested?

I am, Sir, yours faithfully,
GEORGE A. MASON, F.R.C.S. Eng.

Newcastle-upon-Tyne, Nov. 29th, 1933.

OIL BEFORE SUNBATHING

To the Editor of THE LANCET

SIR,—In regard to the increased severity of sunburn following application of oils to the body, reported by your correspondent, "J. C. B.," in THE LANCET of Nov. 4th, I am wondering if the observations of Leopold et al (Amer. Jour. Dis. Child., 1932, xliii., 882) may have escaped his attention and would therefore be of some interest. They noted that (*a*) ultraviolet irradiation increased the blood lipoids in 25 per cent. of their patients; (*b*) inunction with non-irradiated wool-fat produced no changes in blood lipoids; and (*c*) inunction with wool-fat followed by ultra-violet irradiation caused significant increases in blood lipoids in 89 per cent. of the cases with a low initial cholesterol and in 33 per cent. of the cases with a normal initial cholesterol. Inunction and light also produced a rise in free cholesterol esters in 86 per cent. of the cases and of the total alcohol-ether extract in 91 per cent. of the cases. It therefore appears that we actually have some biochemical evidence of the increased effectiveness of ultra-violet irradiation following the application of oils to the body—which seems to corroborate the empirical observations of your correspondent. It is not at all unlikely that further investigations in this field will yield some rather startling findings, as is indicated in the recent report of Eising (Annals of Surg., June, 1931), who found irradiated petrolatum to have an unusual healing effect when applied to chronic ulcers.—I am, Sir, yours faithfully,

HARRY BECKMAN.

Marquette University School of Medicine, Milwaukee, Wisconsin, U.S.A., Nov. 20th, 1933.

ARTERIAL DISEASE OF THE EXTREMITIES

To the Editor of THE LANCET

SIR,—In a very comprehensive and interesting article in THE LANCET of last week, Mr. A. Dickson Wright refers to a condition known by the formidable name of erythrocyanosis crurum puellarum frigida. He states, and to the best of our knowledge quite correctly, that "no ganglionectomies have been recorded for this disease. . . ." May we beg the favour of your space to state that in our series of 98 ganglionectomies we have performed this operation on nine young women suffering from this condition. The results have been uniformly excellent and the symptoms have been completely abolished.

Minor degrees of the disease are, of course, very common, but in the severe cases associated with distress and disability from pain, chilblains, and recurrent ulcers we can strongly recommend the performance of a bilateral lumbar ganglionectomy. Four of these nine patients have now been watched during two years and the results remain completely satisfactory. There has been no relapse in any of the nine patients and in each case normal activity for both work and play has been fully restored.

We are, Sir, yours faithfully,

E. D. TELFORD,

Manchester, Dec. 4th, 1933. JOHN S. B. STOPFORD.

HOT-WATER BOTTLES AFTER BASAL NARCOSIS

To the Editor of THE LANCET

SIR,—Since avertin and the other so-called basal narcotics have come into such general use before anæsthesia, a word of warning appears to be necessary in the use of hot-water bottles during the long sleep which follows the use of these drugs. It is this prolonged sleep, low blood pressure, and the appearance of low vitality with perhaps a chilly feel which tempts nurses, quite naturally, to put hot-water bottles in the beds of these patients. Under no conditions should this be allowed, as these people are particularly prone to burns, even though the bottle is only just warm, covered and used outside blankets. A hot-water bottle is a potential danger after any anæsthetic, but becomes an actual danger after the use of basal narcotics, and should be rigidly prohibited.—I am, Sir, yours faithfully,

Harley-street, W., Dec. 2nd, 1933. Z. MENNELL.

HELMINTHS AND PELLAGRA

To the Editor of THE LANCET

SIR,—In your issue of Nov. 25th Major A. G. Biggam and Dr. Paul Ghalioungui report that they found in pellagrous patients in Egypt a higher helminthic infection-rate than was the average for that country, and suggest that such infection may play a part in producing pellagra, and may account for its occurrence in certain members only of a family all of whom are on the same ill-balanced diet. It is interesting to turn back to an evidently forgotten letter in THE LANCET of May 29th, 1920, in which Dr. H. M. Woodcock, writing of the same country, gave his reasons for concluding that in addition to deficient nutrition as an essential factor in the production of pellagra another might be necessary—namely, the presence of a helminthic infection. Since two separate investigators have, evidently independently, reached the same conclusions, these, it is clear, cannot in future be disregarded.

I am, Sir, yours faithfully,

Ealing, Dec. 5th, 1933. CLAYTON LANE.

LETTSOM

To the Editor of THE LANCET

SIR,—Mr. J. Johnston Abraham, writing in your issue of Nov. 11th, is quite correct, of course, in attributing the permanence of the 1817 edition to its hand-made paper; but is certainly in error in preferring so-called art paper for his own recent "Life of Lettsom"—that is, a paper of unknown base, almost certainly esparto, with a coating of china-clay—on the ground of durability. The report of the Library Association on the durability of paper was against the use of art paper.

There is all the difference between news paper, printed on disintegrated wood-pulp, and a good sound chemical wood paper as recommended in the report. The publisher's difficulty is always, where illustrations are scattered amidst the text, that the best way of printing for this purpose—namely, photogravure, which enables any good uncoated paper to be used for photographic illustrations—is only economical where at least 5000 copies of a book are printed. There are other methods also.

On bulky books the authors of the report had no mercy. I am, Sir, yours faithfully,

Bedford-square, W.C., Nov. 30th, 1933. ONE OF THEM.

OBITUARY

JOSEPH FRANCIS PORTER, D.S.O., M.D. Dub.

THE death is announced of Dr. J. F. Porter, at his home in Helmsley, at the great age of 93, on Dec. 4th. He entered the profession when already about 30 years of age, and graduated in arts at Trinity College, Dublin, in 1868. He took the M.B. degree in 1873, proceeding to the doctorate four years later, having already qualified as M.R.C.S. Eng. Dr. Porter was for 50 years closely and importantly connected with medical and social life in Helmsley, where he acted as medical officer of health for nearly half a century. He was one of the oldest magistrates on the North Riding of Yorkshire Bench, and was county coroner during the greater part of his career, being probably, at the time of his death, the oldest coroner in the country. The duties of this office he discharged actively without assistance until quite recently. Early in life he had served as surgeon in a volunteer regiment, and for his sound work in training V.A.D. detachments before the war he was appointed O.B.E.

EDWIN AWDAS NEATBY, M.D. Brux.

WE regret to announce the death of Dr. Edwin Awdas Neatby, which occurred at his home at East Grinstead on Dec. 1st. He received his medical training at the London Hospital, where he was a surgical scholar, took the diploma of M.R.C.S. in 1880, and that of L.R.C.P. Lond. in the following year, and served as house surgeon to the hospital. He graduated as M.D. Brux. in 1882, and became prominent in homœopathic circles, acting as president of the British Homœopathic Society, and on one occasion presiding over the annual congress. Dr. Neatby wrote upon the treatment of uterine fibroids, and coöperated in the production of a Manual of Homœopathy.

MATERNITY AND CHILD WELFARE IN SOUTH AFRICA. The Government of the Union has decided to appoint a woman medical officer of health, with three health visitors, for child welfare work in the country districts of South Africa. This appointment is made in response to the repeated demands of the South African National Council for Child Welfare and other organisations.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Hospitals and Sweepstakes

IN the House of Lords on Nov. 30th the Duke of SUTHERLAND asked His Majesty's Government whether they would consider a change in the law in regard to sweepstakes in this country, and whether, in view of the fact that several other important countries permitted sweepstakes for the urgent needs of charity, we should continue to deprive ourselves of this valuable source of wealth when it was practically impossible in these days to raise the funds needed for hospitals and other charitable institutions by ordinary methods. Even deducting the prize money distributed by the Irish sweepstakes in this country hundreds of thousands a year went out of our pockets to enrich the Free State hospitals and endow the Free State Exchequer. If the big hospitals said they did not want sweepstakes or lotteries as they would discourage their regular subscribers, let them by all means fall in with their wishes, but vast sums of money were required for other intensely necessary objects. The fund for cancer research was not nearly adequate for its purpose, and doctors appeared to have no real knowledge about influenza or the common cold. The British public had made it quite clear that they wished for the continuation of the voluntary hospital system, but the decline in big fortunes made it difficult to obtain money in large blocks for capital purposes. It was this need which might well be met out of grants from a lottery fund administered by King Edward's Hospital Fund or the Central Fund of the British Hospitals Association out of the block grants made to them from the general fund of the lotteries. Such grants could, I feel confident, be given without fear of alienating the sympathy of existing subscribers and donors.

The same argument applies in the case of institutions other than hospitals which are kept up mainly or entirely by voluntary contributions. They, equally with the hospitals, are in danger of losing their present support if they receive money for maintenance from the lottery fund, but in almost all cases there is some central national body to which they are affiliated in one way or another and to which they are entitled to look for assistance. If help came to the hospitals in this way through the national body he did not think the most determined opponent of lotteries would find cause to cease his personal contribution. The Lotteries Commission was sitting at that moment and a Lotteries Bill was to come before Parliament early in the new year. He hoped that the Home Secretary when drafting his Bill would consider all these points very seriously.

The Duke of ATHOLL said that all the present law did was to stop any honest open effort in this country, to remove the wholesome safeguard of publicity, and to drive such things into the hands of undesirable people.

The Archbishop of CANTERBURY said he did not know what evidence could be produced in support of the statement that it had been found practically impossible to support hospitals by voluntary means; but he would be surprised to know that our hospitals were less adequately equipped with facilities for medical research than those of any other country in the world. If they took a plebiscite of the physicians and surgeons teaching in the medical schools and working in the wards of our hospitals, he doubted whether any would be found to welcome the obtaining of means for further research by methods such as those proposed. The result of such would be the drying up of the springs of individual effort and support. In every part of the country at the present time multitudes of persons were giving voluntary care, interest, thought, and time to the welfare of the hospitals. If the hospitals were to rely on other methods they could hardly expect this happy state of things to continue.

The Bishop of WINCHESTER said there was a real danger that the hospitals instead of gaining from lotteries and sweepstakes would suffer. That he believed had been the experience of the hospitals in Ireland. He was told they were in a very precarious financial position to-day. The direct subscriptions had fallen off.

The Earl of ONSLOW, Chairman of Committees, said he thought it probable that the hospitals would not suffer financially if sweepstakes were available for their finance, but that was not the objection he felt to the suggestion. From time immemorial our hospitals had been based on a system of voluntary support and he would regard it as a matter of extreme danger if they were in any way to interfere with that basis. Since the war our hospitals had been supported by a system of mass contribution, and anything that militated against that would be a dangerous proposition. When about ten years ago he was asked to be chairman of the Voluntary Hospitals Commission the hospitals were in a bad state owing to the debts which they had incurred during the war. The Treasury generously provided £500,000 to liquidate those debts. But a lot of people said that once the hospitals drew support from other than voluntary sources they were cutting at the root of the financial system and it was doubtful whether they would not lose more than they gained. The Commission had to organise the distribution very carefully, and it had to be made quite clear that this was not the thin end of the wedge. He believed that if they instituted a system by which the hospitals benefited from sweepstakes they would get the same results as if they made them dependent on the taxes or the rates.

Lord SANDERSON said the present system of hospital finance involved a tremendous amount of work and anxiety upon the people who controlled the hospitals. It did not spread the burden over the people in at all an equal way. He believed the municipalisation of the hospitals would have great advantages over the present system.

Lord LUKE said the motion contained an exaggerated statement of the financial position of the hospitals. Public attention was drawn to the hospitals that had the greatest need, and not so much was heard of the more numerous hospitals with surpluses. The Irish sweepstake might produce a million or two a year for Irish hospitals, but nine or ten millions were raised for the British voluntary hospitals by a combination of voluntary gifts and contributions from those who received benefits. There was, in addition, the free and generous services given by doctors and committee members and others. There was a fear in hospital circles that if lotteries were legalised and even a million pounds were passed on to the hospitals it would dry up the source of voluntary gifts to a larger extent.

The Earl of LUCAN said the Government would give consideration to the opinions expressed that afternoon. The report of the Royal Commission was now public property and the recommendations contained in it were being carefully examined by the Government. No policy had yet been formulated on the subject, but the Government would lose no time in submitting proposals to Parliament.

Emergency Treatment of Road Accidents

LORD MOYNIHAN'S BILL

In the House of Lords on Dec. 5th Lord MOYNIHAN moved the second reading of the Road Traffic (Emergency Treatment) Bill. He said that in June last he introduced a similar measure to which their lordships gave generous approval, and which was referred to a special committee. That committee, of which he was a member, heard evidence from witnesses representing the British Medical Association, the British Hospitals Association, the Automobile Association, and the Royal Automobile Club. Certain amendments to the Bill had been made by the committee which he hoped their lordships would accept. Speaking generally, it had been recognised that hospitals were suffering great loss, not only in respect of in-patient treatment, but also in respect of emergency treatment or first aid given in connexion with road accidents. The loss to the hospitals was roughly assessed at about £30,000 a year. In his original remarks he had stated that only about one in five medical practitioners who dealt with motor accident cases received any recognition or remuneration for their work. In a very large number of cases very considerable expense was caused to the doctor called in to render emergency treatment. Cases had been quoted to him where it had cost the doctor £50 in expenses in six months. A closer examination, and discussion with doctors up and down the country, showed that his former estimate of one in five was far from correct. It was more accurate to say that only one in 20 or 25 received either verbal or written thanks or remuneration for the work they had done. The only question was what fees should be paid and by whom they should be paid. He (Lord Moynihan) had originally suggested a maximum sum of £3 3*s.* as meeting the case, but it had been pointed out to him that that maximum would be quite likely to become the standard fee, and if that were the case a standard fee of three guineas would obviously be very greatly in excess of what was required to remunerate some doctors for their attendance. The committee had decided that a fee of 12*s.* 6*d.* would be a fair one to charge. He had suffered a certain degree of criticism from members of his own profession for acceding to the decision to reduce the fee to 12*s.* 6*d.* He had no doubt that in a great many cases that sum would be found too little, but it was very considerably in excess of exactly nothing which the great majority of doctors got now. In many cases 12*s.* 6*d.* would be adequate payment for the services rendered. As to the source from which the money should be obtained, the committee, after full consideration, took the view that the best plan was that the risk should be part of the general third-party risk. The number of motor licences of mechanically propelled vehicles on the road was at the last return 2,229,576. If a fee of a 1*s.* was added to the insurance premium it was quite obvious that the amount required to pay the hospitals and medical practitioners for emergency treatment would be easily covered.

LORD DAWSON'S SUPPORT

Lord DAWSON supported the Bill. He said that he thought it would be admitted that there was here a very real grievance. Medical men worked long hours every week. They looked forward to a quiet day on Sunday, but that was the day of all others when they were most likely to be called out. The expenses in which a doctor might be involved as a result of attending motor accident cases were very considerable. He was told of many instances where the dressings alone amounted to a substantial sum, and for all this the doctors at present got nothing. It could not be said that 12*s.* 6*d.* was a princely sum in these circumstances. It was just about the amount which one would pay to a plumber for mending a broken pipe, yet it was the sum offered to men who had undergone years of training to qualify themselves for their profession.

THE GOVERNMENT'S REPLY

The Earl of PLYMOUTH, Parliamentary Under-Secretary for the Colonies, said that the Bill differed from the previous one introduced by Lord Moynihan in certain respects. There was an alteration in the charge for emergency treatment, and instead of being a sum not exceeding £3 3*s.* it was now fixed at 12*s.* 6*d.* Claims for payment need now only be made within seven days, whereas originally they had to be made within 72 hours. Clause 4 of the Bill was a new and important one. It now made the liabilities imposed by the Bill third-party risks, to which the Road Traffic Act applied. Clauses 6 and 7 were new, and he imagined that Clause 7 had been introduced to go some way towards meeting the objection that the owner of a vehicle would be called on to pay fees for emergency treatment even if he might have been in no way responsible for the accident, or might not have been present when it occurred. That clause made it clear that he was in no circumstances entitled to recover what he had had to pay from any persons to whose negligence the accident was actually due. Although the Bill had undoubtedly been altered in various respects, in principle it seemed to be more or less the same as the original Bill. Payments under the present Bill fell on the owner of the vehicle whether he was negligent or not, and Clause 4 required him to insure against those liabilities. It therefore followed clearly that if an authorised insured person made a payment for emergency treatment under the Bill he would at once become liable to make further payments to the hospital provided for under the Road and Rail Traffic Act, whether or not there was any legal liability on the part of the owner of the vehicle. The result of that would be that the liability of authorised insurers under the Bill would be increased a great deal more than he imagined even the select committee or the promoters interned originally. He would be liable for payments up to £50 in relation to an in-patient of a hospital and £5 in respect to an out-patient, whether or not there was any legal liability on him apart from this Bill. In those circumstances, no doubt the House would wish to amend the Bill if it went to committee. The Bill gave to a doctor an enforceable right against the owner of a motor vehicle in an accident to recover remuneration in respect of emergency treatment to any injured person. In those circumstances it would be reasonable to provide that should a doctor apply for payment under the provisions of the Bill, he should not be entitled to charge for any treatment against any other person. He believed other amendments had been suggested to Lord Moynihan, which he would accept.

The main objections to the Bill remained unaffected by the alterations which had been made. This Bill, like the earlier one, undoubtedly ran counter to the established principle of Common Law and would, in effect, fasten liability on a man in respect of an accident for which he might not be in the slightest degree responsible. He presumed that the promoters of the Bill were quite satisfied that in practice medical practitioners could readily recover the small fees to which they would be entitled under the Bill. Human nature, being what it was, one could not help thinking that in many cases the motorists would be very likely to ignore any letters from medical practitioners, of whom they knew nothing, asking for a payment of 12*s.* 6*d.* in connexion with an accident of this kind. He fully realised that medical practitioners and hospitals had a substantial grievance as things stood at present, and he had every sympathy with the object of the Bill. He greatly doubted, however, if the Bill provided a right or even a fair way of attempting to achieve the objects they all had in view. The Government could not accept the particular remedial measures which had been proposed, and they therefore were not in a position to accept responsibility for the Bill. In the circumstances he was not able to give any undertaking, now, that if the Bill reached the House of Commons the Government would be prepared to provide facilities for its passage there.

Lord MOYNIHAN said that obviously the present situation called for remedial measures of some kind. Lord Plymouth's remarks had not been very helpful. Lord Dawson had been President of the British Medical Association, and it was part of the duty of the association to protect, so far as it could, the rights of its members and of the general practitioners throughout the country. The association had given very careful consideration to the point in regard to payment, and, on balance, had decided that in very many cases, although the 12*s.* 6*d.* might be less than was adequate, in many cases it would be adequate. His object in bringing in the Bill was that the present grievances of the hospitals and general practitioners should by some means or other be remedied. He was not wedded to the exact steps which should be taken to achieve that end, but those grievances were considerable and increasing. If grievancies could be removed by the payment of a reasonable sum of money every year, he was quite indifferent to the source from whence that money was derived. It was fantastic to suggest that because a man was called on to pay an additional 1*s.* for his insurance he would withhold his usual subscription to a hospital. Speaking, not only for himself, but for all the people connected with the hospitals and for the general practitioners of the country, he asked the House to give the Bill a second reading.

The Bill was read a second time.

HOUSE OF COMMONS

WEDNESDAY, NOV. 29TH

Native Backwardness in Africa

Captain ERSKINE-BOLST asked the Secretary of State for the Colonies whether his attention had been called to the representations of British scientists, of which a copy had been sent to him, in favour of an inquiry into the causes of Native backwardness in Africa; and if so, whether he proposed to take any action.—Sir PHILIP CUNLIFFE-LISTER replied: I have received a letter from the Eugenic Society urging that steps should be taken to carry on and expand certain researches recently carried out in Kenya. I propose to consult the Colonial Government as to whether any steps can be taken to prosecute an inquiry of the nature suggested, but in the present state of the Colony's finances I very much doubt whether the Colony could find the necessary funds, and I should not be prepared to suggest that the burden should fall on the Government of this country.

Motor Horns and Public Health

Sir WILLIAM DAVISON asked the Minister of Transport whether his attention had been called to a recent order made by the prefect of police in Paris forbidding the sounding of horns or sirens by motor drivers between the hours of 11 P.M. and 6 A.M.; and whether, in view of the annoyance and detriment to health caused to residents in London and other cities in Great Britain from this cause, he would consider the introduction of legislation enabling similar regulations to be made in this country.—Mr. OLIVER STANLEY replied: I am aware of the order to which my hon. friend refers and am considering at the present time whether it would be practicable and desirable to institute a scheme of this nature in a defined area in London for an experimental period.

Motor Accidents and Insurance Liability

Mrs. COPELAND asked the Minister of Transport if he was aware that in a number of cases where serious or fatal injury has been sustained in motor-car accidents it had proved impossible to recover damages, even when judgment had been obtained in the courts, as the insurance companies involved had repudiated liability on various grounds such as mis-statements in proposal forms, withholding material information, &c.; and if he would introduce legislation to remedy this state of affairs and ensure that the courts had jurisdiction in all these cases of disputed liability.—Mr. OLIVER STANLEY replied: I am aware that in some cases injured persons are unable to recover damages owing to the repudiation and liability by the insurance companies. An insurance policy is a contract of indemnity between the insurance company and the insured, and misrepresentation or the withholding of material information, when a proposal for insurance is made, is liable to render a policy so obtained void. The question of further legislation on this and on other points connected with the insurance against third party risks required by owners of motor vehicles is receiving my consideration, but the problem presents many difficulties.

Prevention of Fire in Public Vehicles

Dr. HOWITT asked the Minister of Transport whether his attention had been drawn to the recent fatal results consequent upon fire in a Manchester corporation omnibus; and whether he is satisfied that adequate measures for the prevention of fire were provided in public vehicles.—Mr. OLIVER STANLEY replied: My inquiries into this case are not yet complete. In general, I think the requirements as to the construction and equipment of public service vehicles are adequate.

Slum Clearance: Names of Owners

Captain CROOKSHANK asked the Minister of Health whether he would give instructions that when a scheme for slum clearance had been adopted the competent authority should publish in the press or in some other suitable manner the names of the owners of the slum property which had been condemned.—Mr. SHAKESPEARE (Parliamentary Secretary to the Ministry of Health) replied: Under the Housing Acts (Form of Orders and Notices) Regulation, 1932, a schedule containing the description and situation of the properties included in the order and the owners, lessees, and occupiers (other than tenants for a month or less) is attached to every order made by a local authority in respect of a clearance area, and notice of the making of such an order is published in local newspapers. The place where a copy of the order can be inspected is stated in the notice.

Defence against Chemical Attack

Mr. THOMAS WILLIAMS asked the Financial Secretary to the War Office whether the Chemical Defence Committee made grants to any universities or other educational institutions or to any private research establishment in order to enable research in connexion with chemical warfare to be carried out therein; and, if so, what was the amount of such grants for 1933 and what were the names and addresses of the institutions and/or persons who received them.—Mr. DUFF COOPER replied: Certain scientists at the Universities of Oxford and Cambridge carry out experiments on chemical defence problems, for which payment is made to them from Army funds. The estimated payments are included in the sum of £2555, shown on page 171 of the estimates for the current year.

THURSDAY, NOV. 30TH

Slum Clearance

Major NATHAN asked the Minister of Health the total number of clearance orders and compulsory purchase orders made under Part I. of the Housing Act, 1930, by the London County Council and the Metropolitan borough councils, respectively, since Jan. 1st, 1933; how many of such orders had now been confirmed by him; and how many houses would be demolished in consequence of such orders.—Mr. SHAKESPEARE replied: 16 orders relating to 624 houses have been submitted by the London County Council since Jan. 1st, 1933, of which 9 orders, covering 249 houses, have been confirmed; 29 orders, covering 462 houses, have been submitted by the Metropolitan borough councils, of which 13 orders, covering 154 houses have been confirmed.

Major NATHAN: Does the hon. Member consider that a satisfactory rate of progress?

Mr. SHAKESPEARE: No, Sir. The figures I have given refer to the state of things before we started the national campaign against slums.

Mr. D. G. SOMERVILLE asked the Minister of Health whether, in the case of towns which had stated that they had no slums which merited clearance, his department had made investigation into the local housing conditions; whether any local decisions had been reversed; and, if so, in how many cases.—Mr. SHAKESPEARE replied: The reply to the first part of the question is in the affirmative. There has been a number of instances in which, after representations made by my right hon. friend, a local authority has reviewed its first proposal and submitted a programme, but I cannot give any precise figure.

Mr. HICKS: Does the Minister think that there are any towns or villages in this country slum-free?

Mr. Shakespeare: In every case where a nil return has been sent in we have taken steps to have a very careful inquiry made. We have not accepted a nil return without checking it.

Mr. Joel asked the Minister of Health the names of the 45 towns which had not complied with his request for a statement as to their respective slum clearance plans.—Sir Hilton Young replied: The number has now been reduced to eight, and the names are as follows: Ruthin B., Aberayron U.D., Cwmamman U.D., Ellesmere U.D., Fishguard U.D., Llanwrtyd Wells U.D., New Radnor R.D., and Uwchaled R.D.

Unemployment and Malnutrition

Mr. Tinker asked the Minister of Labour whether he had considered the report of a committee of nine doctors appointed by the British Medical Association, of which a copy had been sent to him, in which it was stated that the average unemployed family was not getting enough food to keep it in reasonable health; and whether, in view of the facts in the report, he would consider the necessity of making provision for more adequate allowances to unemployed persons and their dependants.—Mr. R. S. Hudson (Parliamentary Secretary to the Ministry of Labour) replied: The report to which the hon. Member refers is at present under consideration by the Ministry of Health Advisory Committee on Nutrition. The hon. Member will perhaps allow me to point out that the report does not, as he suggests in his question, state that the average unemployed family is not getting enough food to keep it in reasonable health; on the contrary, it makes it clear that it was no part of its duty to determine any such point. The hon. Member has no doubt read the annual report for 1932 of the Chief Medical Officer of the Ministry of Health, published two months ago, which examines fully the state of health of the average unemployed and shows that at present there are no grounds for apprehension.

Osteopaths and Registration

Mr. Hall Caine asked the Minister of Health whether he would consider the desirability of appointing a committee to consider what steps, if any, should be taken to control and regularise the activities of osteopaths in the interests of the public.—Mr. Shakespeare replied: My right hon. friend does not as at present advised think that any public interest would be served by the appointment of such a committee.

Public Health Propaganda

Dr. Howitt asked the Minister of Health whether, with a view to propaganda in the interests of public health, he would take steps to secure and make use of the poster frames throughout London and the provinces recently in use by the Empire Marketing Board.—Mr. Shakespeare replied: The Government decided to facilitate, so far as they are able to do so, the transfer of these frames to local authorities for use primarily for health propaganda. My right hon. friend issued a circular to the local authorities concerned on Nov. 6th. My right hon. friend is informed that up to the present arrangements have been made for more than 500 of these frames to be taken over by the local authorities.

Local Authorities and Medical Services

Dr. Salter asked the Minister of Health the total cost of the medical services provided under the poor-law, including the district medical and hospital services, in England and Wales; and the total cost of hospital services provided under the Public Health Acts in England and Wales for the latest available year.—Sir Hilton Young replied: The estimated expenditure of poor-law authorities in England and Wales on the treatment of persons suffering from bodily or mental infirmity in poor-law establishments or in receipt of domiciliary relief during the year ended March 31st, 1932, was £6,770,628. Details distinguishing the cost of the district medical and hospital services will be found on page 16 of Part I. of the Local Taxation Returns for England and Wales, 1931–32. The total expenditure of local authorites in England and Wales in the same year on hospital services under the Public Health Acts, including hospitals for the treatment of infectious disease, was approximately £10,750,000. Certain expenditure on hospital services was also incurred under the Maternity and Child Welfare Act, but the amount cannot be precisely stated. The amounts mentioned do not include capital expenditure.

MONDAY, DEC. 4TH

Leprosy in India

Mr. Tom Smith asked the Secretary of State for India whether he was aware of the increase of leprosy in India; what steps were being taken to fight the disease; and whether he could give the numbers of lepers in India for the last three years to the most convenient date.—Mr. Butler (Under-Secretary of State for India) replied: The indications are that leprosy is not increasing in India. The number of persons classified as lepers in the Indian census report for 1931 is 147,911. The corresponding figure in the 1921 census report was 102,513. It is probable, however, that on each occasion the real number was considerably in excess of that returned. There is no reason to suppose that leprosy is increasing in India. Many persons suffering from the disease in a mild form who would formerly have not been regarded as lepers are now classified as such. There are no figures on record for any years except the census years. In regard to part two of the question I would refer the hon. Member to the reply given on Nov. 23rd, 1931. Since that date surveys, treatment, research work, and propaganda connected with leprosy have been steadily expanding so that many more lepers are receiving treatment than was then the case. Most of the local governments have now set up organisations for the treatment of the lepers, and in addition the Indian branch of the British Empire Leprosy Relief Association is actively engaged on research work in leprosy in surveying the incidence of the disease and in training doctors in the modern methods of treatment. More detailed information will be found in the journal "Leprosy in India." I am sending the hon. Member the July issue of that journal.

Workers' Deaths at British Celanese Factory

Mr. Thorne asked the Home Secretary whether his attention had been drawn to the deaths of five workers employed at the British Celanese factory at Spondon, near Derby; whether he was making inquiries as to the cause of the deaths; and what action was to be taken to safeguard the employees.—Sir J. Gilmour replied: Full inquiries are in progress, and meanwhile the manufacturing process in which these men were employed has, I am informed, been entirely discontinued. I should like to take this opportunity of expressing my deep sympathy with the relatives of the men.

TUESDAY, DEC. 5TH

Water-supplies in Scotland

Commander Cochrane asked the Secretary of State for Scotland whether he had considered the difficulties in connection with the improvement of water-supplies in rural areas in Scotland; and what steps he proposed to take in the matter.

Lord Scone asked the Secretary of State for Scotland if he was aware that during the past summer the water-supply of a number of Scottish small towns and country districts failed either partially or totally; and whether he would confer with the local authorities concerned with a view to taking steps to augment the present supplies, and thus avoid a repetition of the inconvenience which this year's drought caused.—Mr. Skelton replied: My right hon. friend is aware of the need for improving the water-supplies in many rural areas in Scotland, and as already announced, it has been decided to make a Government grant available for the purpose. My right hon. friend proposes to direct the special attention of local authorities to the matter and to urge them to carry out works of improvement with the assistance which the grant will offer to them.

Factory Legislation

Viscountess Astor asked the Home Secretary whether it was the intention of the Government to introduce legislation to amend the Factory Acts.—Sir J. Gilmour replied: I regret that there is no prospect of any general amendment of the Factory Acts being undertaken this session.

throughout the country. The association had given very careful consideration to the point in regard to payment, and, on balance, had decided that in very many cases, although the 12*s.* 6*d.* might be less than was adequate, in many cases it would be adequate. His object in bringing in the Bill was that the present grievances of the hospitals and general practitioners should by some means or other be remedied. He was not wedded to the exact steps which should be taken to achieve that end, but those grievances were considerable and increasing. If grievancies could be removed by the payment of a reasonable sum of money every year, he was quite indifferent to the source from whence that money was derived. It was fantastic to suggest that because a man was called on to pay an additional 1s. for his insurance he would withhold his usual subscription to a hospital. Speaking, not only for himself, but for all the people connected with the hospitals and for the general practitioners of the country, he asked the House to give the Bill a second reading.

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HOUSE OF COMMONS

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Mr. HICKS: Does the Minister think that there are any towns or villages in this country slum-free?

quantities of radium, a wide range of needles and seeds in various metals, and a display of special forceps.—Messrs. **Ilford, Ltd.**, in addition to their well-known films and a display of radiograms, show a number of clinical photographs taken with their infra-red screen and film. They claim that this apparatus is a valuable diagnostic aid in lupus; the unhealed areas of skin appearing with a prominence that is not demonstrable in an ordinary photograph.—Messrs. **Kodak Ltd.**, in addition to a wide range of radiograms, show a new viewing-box which they have named the X-Ray Illuminator, flat type. Its price is £4, and it can be supplied on a tilting base for 5*s.* extra. Its makers claim a very even distribution of light, and emphasise the value of the blue-tinted glass screen.—Messrs. **H. K. Lewis & Co., Ltd.**, exhibit a wide collection of radiological text-books, including the latest foreign literature.—Messrs. **Newton & Co.**, have a comprehensive display of lanterns, epidiascopes, and optical apparatus.

If the prices quoted above seem unusually high, it must be remembered that the fitting of ray-proof tubes with shock-proof casing and leads considerably increases the cost of the whole apparatus. To take one maker's figures—a shock-proof mobile ward unit may cost £315 as against £225 for the same unit non-shock proof. In a diagnostic department employing three tubes (for under- and over-couch screening and for an upright stand) the whole apparatus complete may cost between £1000 and £1200 shock-proof, while it would be obtainable for between £830 and £1000 non-shock proof. For a therapy room with one 200 k.V. tube, shock-proofing may cost an extra £200. The extra outlay will be well spent if it results in the protection of the staff and patients from risks of shock.

MEDICAL NEWS

University of Oxford

The honorary degree of D.Sc. has been conferred on Prof. Arthur Thomson, who is retiring from the Dr. Lee's professorship of anatomy. Mr. Eric Pearce Gould has been appointed a member of the board of electors to this professorship.

Dr. E. B. Verney, professor of pharmacology in the University of London, has been appointed examiner in materia medica and pharmacology in place of Prof. Edward Mellanby.

University of Cambridge

Dr. Henry Albert Harris, professor of clinical anatomy at University College, London, has been elected professor of anatomy in the University in succession to Prof. J. T. Wilson, F.R.S., who is retiring next October.

Dr. Harris, who received his medical education at University College, Cardiff, and University College Hospital Medical School, qualified in 1920. In 1929 he took his doctorate of science in the University of London. He worked as demonstrator, assistant professor, and curator of the anatomical museum of University College, becoming assistant to the medical unit in 1927, and professor in 1931. He was the Arris and Gale lecturer for 1929, and was awarded the Symington prize in 1929 and the Alvarenga prize in 1930. In 1932 he was elected a Fellow of University College. His publications include papers on bone metabolism and growth.

On Dec. 2nd the following degrees were conferred :—

M.B., B.Chir.—G. F. Carey.
M.B.—G. J. Meikle, W. S. Dyson, and J. G. V. Smith.

University of London

At recent examinations the following candidates were successful :—

D.P.M.

William Blyth, Doreen P. Firmin, Edith G. Limmex, James Valentine (with special knowledge of psychiatry), and Donald Magrath (with special knowledge of mental deficiency).

Society of Apothecaries of London

At recent examinations the following candidates were successful :—

Surgery.—H. L. Canaval, Univs. of Vienna and Bristol; A. C. E. Cole, Univ. of Camb. and St. Mary's Hosp.; S. Grodd, St. Mary's Hosp.; E. G. Houghton, Univ. of Camb. and St. George's Hosp.; H. G. Howitt, London Hosp.; H. R. Kasday, Middlesex Hosp.; and E. C. Rowlands, St. George's Hosp.

Medicine.—R. Fleming, Univ. of Geneva and London Hosp.; H. D. Robinson, Guy's Hosp.; A. L. L. Silver, Univ. of Oxf. and London Hosp.; and H. B. Thornton, Guy's Hosp.

Forensic Medicine.—C. A. Boucher, Univ. of Oxf. and Guy's Hosp.; C. N. Chowdary, Univ. of Durham; W. C. Heunis, London Hosp.; G. L. R. Tapsall, St. Mary's Hosp.; and G. Wilson, Guy's Hosp.

Midwifery.—C. N. Chowdary, Univ. of Durham.; C. W. Cross, London Hosp.; H. R. Kasday, Middlesex Hosp.; A. G. Manley and J. Richter, St. Mary's Hosp.; S. E. Roberts and H. D. Robinson, Guy's Hosp.; S. M. Sabet, Welsh National School of Medicine, Cardiff; and R. Sugarman, Univ. of Basle and Royal Free Hosp.

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery, and midwifery :—

A. L. L. Silver, G. L. R. Tapsall, and H. B. Thornton.

At a recent examination Dr. J. H. Mulvany satisfied the examiners for the diploma of master of midwifery.

Dinner of the Society of Apothecaries of London.—At a yeomanry dinner on Tuesday last the freedom of this society was conferred on Prof. Edward Mellanby, F.R.S., secretary of the Medical Research Council. In introducing him, Sir William Willcox, the senior warden, spoke of the long service of his brother, Prof. John Mellanby, F.R.S., as one of the society's examiners, and said that in welcoming the new freeman they wished also to honour his co-worker and wife, Mrs. May Mellanby. Formerly the laboratory worker was jealous of the clinician's financial rewards: nowaday the clinician longed for the high wages and short hours of those whose lives were spent in laboratories. It had been Prof. Mellanby's achievement at Sheffield to unite these jealous factions in his own person. His knowledge of the physiology of calcium was unrivalled, and his contributions to the study of vitamins were of high importance; while his investigations concerning alcohol were still quoted by teetotallers and (in selected passages) by brewers. In reply, Prof. Mellanby said that in reviewing the work of the Medical Research Council during the late Sir Walter Fletcher's secretaryship he had been struck by the amazing progress made in medicine during the last 20 years. Yet in a world where the laws of thermodynamics were overturning, the outlook of the profession remained more or less static and Victorian; it retained its conviction of progress; it believed that every year pain and disease and suffering were getting less. Long might this outlook continue. Lieut.-Colonel C. T. Samman, past-master of the society, proposing the Guests, spoke of the evolution of after-dinner speaking from the savage custom of making human sacrifices at feasts. He welcomed, among others, Prof. A. Harden, F.R.S., and Prof. R. Robison, F.R.S., of the Lister Institute, Sir Arthur Robinson (secretary to the Ministry of Health), Sir Frederick Menzies, Mr. Warren Low, Sir Bernard Spilsbury, Mr. M. Heseltine (registrar of the General Medical Council), Sir John Thomson-Walker, Sir Joseph Skevington, Mr. H. S. Souttar, and as deans of medical schools, Mr. Girling Ball, Dr. C. M. Wilson, Mr. E. A. Crook, Prof. W. Wright, Dr. A. M. H. Gray, and Prof. A. W. Sheen. Prof. Harden, in his reply, referred to the contrast between discoveries due to steady advance —for example, the isolation of calciferol which crowned the work on vitamin D in which Prof. Mellanby had played so large a part—and those made casually. No one would have expected the isolation of vitamin C to come from the study of reducing substances in the suprarenal cortex. Mr. Souttar, also replying, expressed his relief that the society should have decided, hundreds of years ago, to put its knowledge of drugs at the service of the public. Catherine de Medici about the same time was putting hers to political purposes. Dr. Cecil Wall, past-master, proposing the toast of the Society, described the Parliamentary discussions, exactly a century ago, on the Apothecaries Act Amendment Bill, and the measures taken by the society to turn medical tradesmen into a profession. The Master (Dr. J. O. Wakelin Barratt) said that the society had always been a fighting society. It was still progressive but wished to work wherever possible with other medical organisations.

BRITISH INSTITUTE OF RADIOLOGY

THE annual congress of this Institute is being held this week at the Central Hall, Westminster. On Dec. 6th the exhibition held in connexion with it was opened by Lord Horder, and later in the afternoon Dr. Stanley Melville delivered his presidential address, referring to the history of the use of

X Rays in the Diagnosis of Lung Disease

He pointed out that at first it was viewed with suspicion, often with hostility, and received little or no encouragement from clinicians, with one or two exceptions. He regarded this attitude as natural and inevitable in a profession so properly conservative as that of medicine. A similar attitude had been taken up by clinicians some 100 years previously on the introduction of the stethoscope, which led to a spirited defence of the innovation by Stokes of Dublin.

The president dealt with the possible dangers that attended the combination of the work of clinician and radiologist by the same person. The clinician whose work entailed the production of artificial pneumothorax was an exception, for he naturally liked to have at his disposal means for checking his results by X rays. The tuberculosis officer, again, was one whose whole outlook on the problems with which he was confronted depended upon easy access to X rays. But whenever possible it was to the advantage of all parties for one man to carry out the physical and another the radiological examination, thereafter comparing notes. He went on to discuss the difficulties caused in the early days of radiology by the low-power plant, contrasting this with the splendid apparatus available to-day. He emphasised the fact that the modern self-protected tube which had displaced the old gas-filled tube and had revolutionised radiography was the direct result of the recommendations of the X Ray and Radium Protection Committee.

The difficulty of diagnosis in chest radiography was not sufficiently known. In the perfecting of apparatus the limit had perhaps been reached, for any further detail shown in the radiogram might become a positive embarrassment. It was with this in view that A. Köhler took as the title of his book "Roentgenology, the Borderland of the Normal and the Early Pathological in the Skiagram." The president referred to some recent work by Lassen and Isager, published in the *Ugeskrift for laeger*, in which an attempt was made to determine the best tests for the diagnosis of pulmonary tuberculosis. A careful study of 100 cases revealed the interesting fact that of the seven tests to which each potential case was submitted, the X ray examination alone showed signs in every case.

Another subject dealt with in the course of the address was the value of a standard position in taking radiograms. It was of inestimable value to be able to reproduce months or even years after the original picture had been taken a corresponding picture under identical conditions and this was possible only if a fixed position for centring was adopted.

In conclusion, the president said that a period of nearly 25 years in the X ray department of a large and busy chest hospital would convince one of the futility of X rays as a method of diagnosis or make one an optimist; he himself had become an optimist.

Exhibition of Apparatus

The principal feature this year of the exhibition, which will remain open till 7.45 P.M. to-day (Friday), is shock-proof and ray-proof apparatus of all kinds. One firm manufactures a shock-proof deep therapy tube which will work at 300 k.V., and several 200 k.V. tubes were to be seen. There is now a wide range of mobile ward apparatus with armoured leads and earthed casing for the tube, so that accident due to ignorant or inexperienced handling can almost certainly be avoided.

Messrs. CUTHBERT ANDREWS have designed a shock-free Protexray tube in three sizes, 3, 6, and 10 k.W.; the first two of these are priced at £105 and the last at £116, the prices of the standard models of the same tubes being respectively £37 10*s*., £38 10*s*., and £50. This firm claims to sell the only modern type of X ray tube manufactured throughout in Great Britain from all-British materials.—FREDERICK R. BUTT & Co. have on view a ward unit mounting a shock-proof Protexray tube with a peak of 100 k.V. and an output of 30 m.a.—Messrs. STANLEY COX., LTD. exhibit a shock-proof ward set with a 75 k.V. 20 m.a. Philips tube at £200.—Messrs. A. E. DEAN & Co. exhibit an interesting motor-driven gastric couch with adjustable and tiltable Potter-Bucky diaphragm, in which the cassette can be instantly superimposed for a snapshot. The price with tube is £350. The movement of the Potter-Bucky can be synchronised with that of the patient's diaphragm.—Messrs. NEWTON & WRIGHT, LTD., show a shock-proof and ray-proof Philips deep therapy tube on a counterbalanced Gantry stand, designed for the Marie Curie Hospital. The tube, which is priced at £300, is constructed to work at 200 k.V., but the generator will produce a tension of 300 k.V. if required. The price of the mounting is £195. The same makers exhibit a shock-proof ward set generating 30 m.a. at 100 k.V., priced at £315 complete with the tube.—Messrs. PHILIPS METALIX draw particular attention to a 400 k.V. deep therapy tube. It is as yet, they say, impracticable to design shock-proof casing for use with such a high voltage, but the tube is ray-proof, the electrodes being confined within a substantial lead shield at the middle of the tube. The price is not yet fixed, but will be about £300. They also show a shock-proof Rotalix diagnostic tube with an output of 18 kilowatts and a focus of only 1·22 m.m. squared, at £200; also a gas-filled rectifying valve with a volt drop of 40 volts only as compared with the 3 to 6 k.V. drop of a glass valve.—Messrs. SCHALL & SONS, Ltd., show a neat set designed for a small department or a cottage hospital. It is entirely shock-proof, generates 50 m.a. at 90 k.V., and is fitted with dual control. The price is £250. A special feature of their stand is a "cannon" for deep therapy capable of taking any type of tube, fitted with lateral movement and a motor for ventilating an air-cooled tube or for circulating the water in a jacketed tube. The price is £400 without a tube. Their diagnostic outfit will take any ray-proof tube in a shock-proof casing. They exhibit a mobile shock-proof set, which can be finished in any colour at £200; also a remote-controlled shock-proof high-tension switch-gear, which can be supplied for any number of tubes. The price of a three-way switch is £95.—The SOLUS ELECTRICAL Co. have on view many types of generators, one of the most interesting of which is the ward trolley set with a Metalix shock-proof tube, for £267; the screening-stand model for 4 ft. 6 in. technique costs £355.—The VICTOR X-RAY CORPORATION, LTD., show a combination table with shock-proof over-couch and under-couch screening. The special feature of this apparatus is that the high-tension transformer, filament transformer and tube are housed together in a single unit. The input is therefore only 80 volts. The cooling oil also serves as an insulator. The price is about £600. This firm also shows a 200 k.V. deep therapy tube; it also manufactures a 300 k.V. shock-proof tube, and has constructed a tube to work at 800 k.V. for the New York Memorial Hospital.—Messrs. WATSON & SONS show several models of their shock-proof Sunic apparatus, including the Junior ward outfit at £187 10*s*. and the Standard ward outfit at a somewhat higher price. They also showed the Röntgen power unit, generator, which can be fitted to any type of couch and screening stand.—Messrs. DARBY & Co., LTD. show apparatus for radium therapy, including a sensitive balance for weighing small quantities of radium, a wide range of needles and seeds in various metals, and a display of special forceps.—Messrs. **ILFORD, LTD.**, in addition to their well-known films and a display of radiograms, show a number of clinical photographs taken with their infra-red screen and film. They claim that this apparatus is a valuable diagnostic aid in lupus; the unhealed areas of skin appearing with a prominence that is not demonstrable in an ordinary photograph.—Messrs. **KODAK LTD.**, in addition to a wide range of radiograms, show a new viewing-box which they have named the X-Ray Illuminator, flat type. Its price is £4, and it can be supplied on a tilting base for 5*s*. extra. Its makers claim a very even distribution of light, and emphasise the value of the blue-tinted glass screen.—Messrs. **H. K. LEWIS & CO., LTD.**, exhibit a wide collection of radiological text-books, including the latest foreign literature.—Messrs. **NEWTON & CO.**, have a comprehensive display of lanterns, epidiascopes, and optical apparatus.

If the prices quoted above seem unusually high, it must be remembered that the fitting of ray-proof tubes with shock-proof casing and leads considerably increases the cost of the whole apparatus. To take one maker's figures—a shock-proof mobile ward unit may cost £315 as against £225 for the same unit non-shock proof. In a diagnostic department employing three tubes (for under- and over-couch screening and for an upright stand) the whole apparatus complete may cost between £1000 and £1200 shock-proof, while it would be obtainable for between £830 and £1000 non-shock proof. For a therapy room with one 200 k.V. tube, shock-proofing may cost an extra £200. The extra outlay will be well spent if it results in the protection of the staff and patients from risks of shock.

MEDICAL NEWS

University of Oxford

The honorary degree of D.Sc. has been conferred on Prof. Arthur Thomson, who is retiring from the Dr. Lee's professorship of anatomy. Mr. Eric Pearce Gould has been appointed a member of the board of electors to this professorship.

Dr. E. B. Verney, professor of pharmacology in the University of London, has been appointed examiner in materia medica and pharmacology in place of Prof. Edward Mellanby.

University of Cambridge

Dr. Henry Albert Harris, professor of clinical anatomy at University College, London, has been elected professor of anatomy in the University in succession to Prof. J. T. Wilson, F.R.S., who is retiring next October.

Dr. Harris, who received his medical education at University College, Cardiff, and University College Hospital Medical School, qualified in 1920. In 1929 he took his doctorate of science in the University of London. He worked as [illegible] professor, and curator of the anatomical [illegible] College, becoming assistant to the [illegible] professor in 1931. He was the Arris and Gale lecturer for 1929, and was awarded the Symington prize in 1929 and the Alvarenga prize in 1930. In 1932 he was elected a Fellow of University College. His publications include papers on bone metabolism and growth.

On Dec. 2nd the following degrees were conferred:—

M.B., B.Chir.—G. F. Carey.
M.B.—G. J. Meikle, W. S. Dyson, and J. G. V. Smith.

University of London

At recent examinations the following candidates were successful:—

D.P.M.

William Blyth, Doreen P. Firmin, Edith G. Limmex, James Valentine (with special knowledge of psychiatry), and Donald Magrath (with special knowledge of mental deficiency).

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—H. L. Canaval, Univs. of Vienna and Bristol; A. C. E. Cole, Univ. of Camb. and St. Mary's Hosp.; S. Grodd, St. Mary's Hosp.; E. G. Houghton, Univ. of Camb. and St. George's Hosp.; H. G. Howitt, London Hosp.; H. R. Kasday, Middlesex Hosp.; and E. C. Rowlands, St. George's Hosp.

Medicine.—R. Fleming, Univ. of Geneva and London Hosp.; H. D. Robinson, Guy's Hosp.; A. L. L. Silver, Univ. of Oxf. and London Hosp.; and H. B. Thornton, Guy's Hosp.

Forensic Medicine.—C. A. Boucher, Univ. of Oxf. and Guy's Hosp.; C. N. Chowdary, Univ. of Durham; W. C. Heunis, London Hosp.; G. L. R. Tapsall, St. Mary's Hosp.; and G. Wilson, Guy's Hosp.

Midwifery.—C. N. Chowdary, Univ. of Durham.; C. W. Cross, London Hosp.; H. R. Kasday, Middlesex Hosp.; A. G. Manley and J. Richter, St. Mary's Hosp.; S. E. Roberts and H. D. Robinson, Guy's Hosp.; S. M. Sabet, Welsh National School of Medicine, Cardiff; and R. Sugarman, Univ. of Basle and Royal Free Hosp.

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery, and midwifery:—

A. L. L. Silver, G. L. R. Tapsall, and H. B. Thornton.

At a recent examination Dr. J. H. Mulvany satisfied the examiners for the diploma of master of midwifery.

Dinner of the Society of Apothecaries of London.—At a yeomanry dinner on Tuesday last the freedom of this society was conferred on Prof. Edward Mellanby, F.R.S., secretary of the Medical Research Council. In introducing him, Sir William Willcox, the senior warden, spoke of the long service of his brother, Prof. John Mellanby, F.R.S., as one of the society's examiners, and said that in welcoming the new freeman they wished also to honour his co-worker and wife, Mrs. May Mellanby. Formerly the laboratory worker was jealous of the clinician's financial rewards: nowaday the clinician longed for the high wages and short hours of those whose lives were spent in laboratories. It had been Prof. Mellanby's achievement at Sheffield to unite these jealous factions in his own person. His knowledge of the physiology of calcium was unrivalled, and his contributions to the study of vitamins were of high importance; while his investigations concerning alcohol were still quoted by teetotallers and (in selected passages) by brewers. In reply, Prof. Mellanby said that in reviewing the work of the Medical Research Council during the late Sir Walter Fletcher's secretaryship he had been struck by the amazing progress made in medicine during the last 20 years. Yet in a world where the laws of thermodynamics were overturning, the outlook of the profession remained more or less static and Victorian; it retained its conviction of progress; it believed that every year pain and disease and suffering were getting less. Long might this outlook continue. Lieut.-Colonel C. T. Samman, past-master of the society, proposing the Guests, spoke of the evolution of after-dinner speaking from the savage custom of making human sacrifices at feasts. He welcomed, among others, Prof. A. Harden, F.R.S., and Prof. R. Robison, F.R.S., of the Lister Institute, Sir Arthur Robinson (secretary to the Ministry of Health), Sir Frederick Menzies, Mr. Warren Low, Sir Bernard Spilsbury, Mr. M. Heseltine (registrar of the General Medical Council), Sir John Thomson-Walker, Sir Joseph Skevington, Mr. H. S. Souttar, and as deans of medical schools, Mr. Girling Ball, Dr. C. M. Wilson, Mr. E. A. Crook, Prof. W. Wright, Dr. A. M. H. Gray, and Prof. A. W. Sheen. Prof. Harden, in his reply, referred to the contrast between discoveries due to steady advance—for example, the isolation of calciferol which crowned the work on vitamin D in which Prof. Mellanby had played so large a part—and those made casually. No one would have expected the isolation of vitamin C to come from the study of reducing substances in the suprarenal cortex. Mr. Souttar, also replying, expressed his relief that the society should have decided, hundreds of years ago, to put its knowledge of drugs at the service of the public. Catherine de Medici about the same time was putting hers to political purposes. Dr. Cecil Wall, past-master, proposing the toast of the Society, described the Parliamentary discussions, exactly a century ago, on the Apothecaries Act Amendment Bill, and the measures taken by the society to turn medical tradesmen into a profession. The Master (Dr. J. O. Wakelin Barratt) said that the society had always been a fighting society. It was still progressive but wished to work wherever possible with other medical organisations.

Royal Faculty of Physicians and Surgeons of Glasgow

At the monthly meeting of the Faculty on Dec. 4th, the following were admitted Fellows of Faculty: James Inglis Cameron, M.B., of Glasgow; Charles Aikman Gourlay, *D.S.O.*, M.D., of Bishopton; Rajinder Singh Grewal, L.M.S., of London; and Andrew Hunter, M.B., of Glasgow.

Society for the Study of Inebriety

A meeting of this society will be held in the rooms of the Medical Society of London, 11, Chandos-street, W., on Jan. 9th, at 4 P.M., when Sir William Willcox will open a discussion on medico-legal aspects of alcohol and drug addiction.

West Kent Medico-Chirurgical Society

A meeting of this society will be held to-day, Friday, Dec. 8th, at 8.45 P.M., at the Miller General Hospital, Greenwich, S.E. Sir Charles Gordon-Watson will deliver the Purvis oration, taking as his subject Progress in Rectal Surgery.

Hospital Officers' Diplomas

The first diploma of fellowship (honoris causa) of the Incorporated Association of Hospital Officers was presented at the recent annual meeting to Sir Arthur Stanley, vice-patron of the association. Sir Arthur afterwards presented diplomas to Sir Ernest Morris, Sir James Michelli, and other senior hospital secretaries.

Eugenics Society

A meeting of this society will be held on Tuesday, Dec. 19th, at 5.30 P.M., at the rooms of the Linnean Society, Burlington House, Piccadilly, London, W., when there will be a discussion on family allowances. The speakers will include Mrs. Eva Hubback, Mr. C. V. Drysdale, D.Sc., Mr. C. C. Hurst, Ph.D., and Lady Askwith.

Australian and New Zealand Medical Association in England

The winter dinner of this association will be held at the Trocadero Restaurant, Piccadilly, on Friday, Dec. 15th, at 7.45 for 8 P.M. Mr. L. Graham Brown will preside, and Mr. Cecil Rowntree will be the official guest. All medical visitors from Australia and New Zealand, whether members of the association or not, are invited to be present. The hon. secretaries (Mr. E. T. C. Milligan and Mr. Philip Jory) may be addressed at 26, Queen Anne-street, W.1.

Research in Mental Disease in Ireland

Our Dublin Correspondent writes:—"The Irish Division of the Medico-Psychological Association is, it is stated, endeavouring to interest the Government of the Irish Free State in the establishment of a national laboratory for pathological investigation in cases of mental disease. It is, indeed, well over 30 years since this project was first put forward, but successive Governments failed to give it support. The present Minister for Local Government and Public Health has, however, shown interest in the care and treatment of mental disease, and it is understood that representations will shortly be made to him. The suggestion is that there should be a central laboratory which would have access to material from the several public mental hospitals in the country. In addition to strictly pathological investigation there should be research in biochemical and social fields, including the study of hereditary factors."

A Tribute to Prof. Hume

On Nov. 29th Dr. W. E. Hume was entertained to dinner at the Royal Station Hotel, Newcastle-on-Tyne, by his house physicians, past and present, to celebrate his completion of 25 years as a member of the honorary staff of the Royal Victoria Infirmary. The senior of his hosts, Dr. E. D. Smith, of Whickham, proposed his health, which was drunk with great enthusiasm. Dr. Hume, in reply, paid tribute to great teachers and mentioned more especially the late Sir David Drummond, the late Sir Byrom Bramwell, Prof. Robert Howden, and Mr. John Clay. He indulged in reminiscences of his early days in London and Newcastle and expressed his opinion that in modern medical education the clinical side is tending to sink too much into the background. Dr. Alan Angus thanked Dr. Hume on behalf of those present for the signed portraits which he had given to them.

Cork Clinical Society

At a meeting of this society on Nov. 17th Dr. C. B. Pearson discussed a case of impacted ureteric calculus, and Dr. D. F. Hegarty a case of renal calculus, both showing specimens and pyelograms. Dr. B. F. Honan brought forward a patient with early mental changes, and the diagnosis and treatment were discussed. Prof. J. M. O'Donovan showed a patient with mitral stenosis, and demonstrated some new points in the diagnosis of this condition, especially with electrocardiography and radiography.

Enlargement of Huddersfield Royal Infirmary

On Friday last week Lord Moynihan opened an extension of this hospital. Out-patients and casualty patients will now be dealt with on a one-way traffic system, and the out-patients' waiting-room will be seated for 300 persons. There is a complete adenoids and tonsils unit for children who, instead of returning home immediately, will occupy a recovery room for two or three days. Massage patients will be dealt with by appointment, and 28 can be dealt with simultaneously. The nursing and domestic accommodation has been enlarged, and each nurse and maid will have a separate room.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
Monday, Dec. 11th.—4.30 P.M., *United Services.* Colonel E. M. Cowell: Air Ambulances.
Tuesday.—5 P.M., Psychiatry and Therapeutics and Pharmacology. The Uses and Dangers of Hypnotic Drugs Other than Alkaloids. Joint discussion to be opened by Dr. F. L. Golla, Dr. P. K. McCowan, Sir William Willcox, and Prof. J. A. Gunn, followed by Dr. Roche Lynch, Dr. G. W. B. James, and others.
Wednesday.—8.30 P.M., Surg
Friday.—8.15 P.M., Physical
and Gynæcology. The
in Gynæcological Conditi
be opened by Dr. E. P. Cumberbatch, Dr. Leonard Boys, Mr. Martin Oldershaw, and Dr. J. S. Fairbairn, *followed by Dr. Agnes Savill and others.*

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
Monday, Dec. 11th.—8.30 P.M., Discussion on Staphylococcal Infections, to be introduced by Mr. Claude Frankau, Dr. J. H. Thursfield, and Dr. L. E. H. Whitby.

HARVEIAN SOCIETY OF LONDON.
Thursday, Dec. 14th.—8.30 P.M. (at the Town Hall, Paddington), Dr. Lionel Penrose: The Influence of Heredity on Disease. (*Buckston Browne Prize Essay.*)

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Royal Northern Hospital, Holloway-road, N.
Wednesday, Dec. 13th.—9 P.M., Dr. S. Monckton Copeman and Dr. Claude Gouldesbrough: The Effect of Liberation of Invisible Ultra-violet from the Nucleus of a Cell and its Bearing on Cancer Treatment.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY, 11, Chandos-street, W.
Thursday, Dec. 14th.—8.30 P.M., Dr. Frank Layton: *Purpose and Some Neuroses.* Dr. O. H. Woodcock: The Tyranny of the Invalid.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Bolingbroke-grove, Wandsworth Common, S.W.
Wednesday, Dec. 13th.—9 P.M., Mr. P. H. Mitchiner: When to "Wait and See" in Acute Appendicitis.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Manson House, Portland-place, W.
Thursday, Dec. 14th.—8.15 P.M., Colonel W. P. MacArthur: Cysticercosis as seen in the British Army. Preceded *at 7.45 P.M. by a demonstration.*

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, Russell-square, W.C.
Friday, Dec. 15th.—5 P.M., Discussion on the Organisation and Administration of the School Medical and Dental Services. Opened by Dr. Andrew Davidson and Mr. C. Doswell Wallis.

PADDINGTON MEDICAL SOCIETY.
Tuesday, Dec. 12th.—9 P.M. (at the Hospital for Epilepsy and Paralysis, Maida Vale), Dr. Wilfred Harris: Clinical Demonstration.

HACKNEY MEDICAL SOCIETY, Metropolitan Hospital, Kingsland-road, E.
Wednesday, Dec. 13th.—9.30 P.M., Mr. R. Coyte: Enlarged Prostate.

BIOCHEMICAL SOCIETY.
Friday, Dec. 15th.—4.30 P.M. (at St. Thomas's Hospital *Medical School, S.E.*), Communications.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W.C.
THURSDAY, Dec. 14th.—5 P.M., Prof. A. H. Burgess: Electrosurgery. (Bradshaw Lecture.)

CHARING CROSS HOSPITAL MEDICAL SCHOOL.
SUNDAY, Dec. 10th.—10.30 A.M., Mr. L. G. Brown: Management of Ear, Nose, and Throat Cases in General Practice. 11.45 A.M., Surgical Cases of Interest, illustrated by photographs.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.
THURSDAY, Dec. 14th.—4.30 P.M., Dr. J. M. Hamill: Milk. 9 P.M., Dr. W. Sheldon: Some Aspects of Enuresis.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Dec. 15th.—4 P.M., Mr. F. W. Watkyn-Thomas: Lateral Sinus Thrombosis.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
THURSDAY, Dec. 14th.—3.15 P.M., Dr. H. C. Semon: Eczematoid Ringworm.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Dec. 12th.—5 P.M., Dr. S. E. Dore: Erythemato-squamous Eruptions.
THURSDAY.—5 P.M., Dr. J. A. Drake: Urticaria.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
TUESDAY, Dec. 12th.—11.30 A.M., Dr. A. G. Signy: B C G, in the Prevention of Tuberculosis.
WEDNESDAY.—9.30 A.M., Skin Clinic. 2 P.M., Dental Clinic.
THURSDAY.—2 P.M., Tonsils, Adenoids, and Anæsthesia.
SATURDAY.—9.30 A.M., Eye Clinic.
Medical and Surgical Out-patient Clinics: daily from Mond. to Sat., 10 A.M. to 12 noon. Medical Wards: mornings, 10 A.M., Mond., Wed., Thurs., and Sat.; afternoons, 2 P.M., Mond., Tues., Thurs., and Frid. Surgical Wards: Tues., Thurs., Frid. mornings, and Wed. afternoon.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.
WEDNESDAY, Dec. 13th.—4 P.M., Mr. W. H. Ogilvie: Pre- and Post-operative Treatment in Surgical Cases.

BROWN INSTITUTION.
WEDNESDAY, Dec. 13th, and two following days.—5 P.M. (London School of Hygiene and Tropical Medicine, Keppel-street, W.C.), Prof. F. W. Twort, F.R.S.: Present-day Problems in Bacteriology. (Series of five lectures.)

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James Hospital, Ouseley-road, Balham, S.W.
WEDNESDAY, Dec. 13th.—4 P.M., Dr. W. J. O'Donovan: Pathomimia Cutanea and the Workmen's Compensation Act.

ROYAL INSTITUTE OF PUBLIC HEALTH, 23, Queen-square, W.C.
WEDNESDAY, Dec. 13th.—4 P.M., Miss Norah March: Health Education and Propaganda.

ANCOATS HOSPITAL, Manchester.
THURSDAY, Dec. 14th.—4.15 P.M., Dr. A. Renshaw: Kidney Efficiency. (Followed by a demonstration in the Laboratory.)

MANCHESTER ROYAL INFIRMARY.
TUESDAY, Dec. 12th.—4.15 P.M., Dr. T. H. Oliver: Pyelitis.
FRIDAY.—4.15 P.M., Dr. E. B. Leech: Demonstration of Medical Cases.

LEEDS GENERAL INFIRMARY.
TUESDAY, Dec. 12th.—4 P.M., Mr. Richardson: Demonstration of Surgical Cases.

GLASGOW Post-graduate Lectures.
WEDNESDAY, Dec. 13th.—4.15 P.M. (at the Royal Infirmary), Mr. James Taylor: Surgical Cases.

Appointments

DOBSON, J. G., M.B., Ch.B. Camb., has been appointed Medical Referee under the Workmen's Compensation Act for the Duns Sheriff Court District (Roxburgh, Berick, and Selkirk).

HERBERT, S., M.D. Vienna, M.R.C.S., L.R.C.P. Lond., reappointed Medical Referee to the Board of Control for Manchester and District.

LEWIS, G. ERIC, M.B. Camb., M.R.C.P. Lond., Hon. Physician to the Royal Infirmary, Hull.

SELLORS, T. H., D.M., M.Ch. Oxf., F.R.C.S. Eng., Asst. Surgeon to the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park.

SOLOMONS, BETHEL, M.D. Dub., F.R.C.P. Irel., Gynæcologist to Dr. Steevens' Hospital, Dublin.

Certifying Surgeons under the Factory and Workshop Acts: CLYNE, C., M.B., Ch.B. Aberd. (Cross Hills, York); MCTAVISH, J. S., M.B., Ch.B. Glasg. (Millport, Bute).

London County Council Hospital Staff.—The following appointments, promotions, and transfers are announced. A.M.O. (I.) and (II.) = Assistant Medical Officer, Grades I. and II.

BAILEY, E. T., F.R.C.S. Eng., Senior A.M.O. (I.), St. Leonard's.
BROWNLEE, J. G., M.D., Queen's Univ., Ontario, A.M.O. (I.), Lewisham.
BURGES, C. P., M.B. Edin., A.M.O. (I.), Princess Mary's Hospital for Children.
BUTTERWORTH, JOAN, M.B. Lond., A.M.O. (I.), Northern.
O'DONNELL, M. J., M.B., N.U.I., A.M.O. (I.), Grove Park.
TWOHILL, J., M.B. Dubl., A.M.O. (I.), St. Leonards.

Vacancies

For further information refer to the advertisement columns

Ashton-under-Lyne District Infirmary.—H.S. At rate of £150.
Barnsley, Beckett Hospital and Dispensary.—Cas. O. £250.
Birkenhead General Hospital.—Hon. Asst. Surgeon.
Birmingham General Hospital.—Res. Surg. Reg. £100–£140.
Blackburn Royal Infirmary.—Third H.S. £175.
Bolton Royal Infirmary.—H.P. £200.
Bristol General Hospital.—H.P.'s., H.S.'s, &c. At rate of £80. Also Cas. H.S. At rate of £100.
Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.
Canterbury, Kent and Canterbury Hospital.—H.S. At rate of £125.
Central London Ophthalmic Hospital, Judd-street, W.C.—Jun. H.S. £100.
Chesterfield and North Derbyshire Royal Hospital.—Cas. O. At rate of £200.
Colchester, Essex County Hospital.—Asst. H.S. £120.
Colchester, Royal Eastern Counties' Institution.—Med. Supt. for Bridge Home, Witham. £550.
Durham University and College of Medicine, Public Health Laboratory.—Whole-time Asst. £350.
Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.
Fulham Hospital, St. Dunstan's-road, Hammersmith, W.—Clin. Asst. £100.
Harrogate, Royal Bath Hospital.—Res. M.O. At rate of £156.
Hospital for Consumption and Diseases of the Heart, Brompton, S.W.—Res. M.O. £350.
Hull Municipal Maternity Home and Infants' Hospital.—Jun. Res. M.O. £100.
Ilford, King George Hospital.—H.S. At rate of £100.
Infants Hospital, Vincent-square, Westminster.—Asst. Ophth. Surgeon. Also Clin. Asst. to Radiological Dept.
Liverpool Hospital for Consumption and Diseases of the Chest, Mount Pleasant.—Hon. Surgeon.
London Hospital, E.—Surg. First Asst. and Reg. £300.
Macclesfield General Infirmary.—Second H.S. £150.
Manchester Ear Hospital, Grosvenor-square, All Saints.—Res. H.S. £120.
North Middlesex County Hospital.—Jun. Res. Asst. M.O. £250.
Norwich, Norfolk and Norwich Hospital.—H.S., H.S. to Special Depts. Each £120.
Nottingham Childr [illegible] S. At rate of £150.
Portsmouth Royal [illegible] e of £130.
Princess Beatrice [illegible] *, Earl's Court, S.W.*—Res. M.O. At rate of £110.
Princess Elizabeth of York Hospital for Children, Shadwell, E.—Asst. Physician. £40.
Queen's Hospital for Children, Hackney-road, E.—Physician for Skin Dept.
Reading, Royal Berkshire Hospital.—H.S. £150.
Royal Free Hospital, Gray's Inn-road, W.C.—Res. Cas. O. At rate of £150.
St. Olave's Hospital, Lower-road, Rotherhithe, S.E.—H.P. £80.
St. Peter's Hospital, Whitechapel.—Res. Med. Supt. £1000.
St. Stephen's Hospital, Fulham-road, S.W.—Asst. M.O. £350.
Shanghai Municipal Council, Pub. Health Dept.—Asst. M.O. 650 Taels per mensem.
Sheffield Children's Hospital.—H.S. At rate of £100.
Sheffield Royal Infirmary.—Two H.S.'s., H.P., Ophth. H.S., Asst. Cas. O., and Asst. Aural and Ophth. H.S. Each at rate of £80.
South-Eastern Hospital for Children, Sydenham, S.E.—Jun. Res. M.O. At rate of £120.
Stamford, Rutland and General Infirmary.—H.S. At rate of £200.
Stoke-on-Trent, Stanfield Sanatorium.—Asst. Tuber. O. £350.
Torquay, Torbay Hospital.—H.S. £175.
Warrington Infirmary and Dispensary.—H.S. £150.
Wigan, Royal Albert Edward Infirmary and Dispensary.—H.S. At rate of £150.
Willesden General Hospital, Harlesden-road, N.W.—Cas. O. At rate of £100. Also Clin. Assts. for Out-patients' Dept.
Woolwich and District War Memorial Hospital, Shooter's-hill, S.E. H.P. and H.S. Each at rate of £100.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Tewkesbury (Gloucester) and Mossley (Lancaster).

Births, Marriages, and Deaths

BIRTHS

MACKENZIE.—On Dec. 3rd, at Kasauli, India, the wife of Major E. F. W. Mackenzie, O.B.E., M.C., R.A.M.C., of a son.

WILLOUGHBY.—On Nov. 30th, at Welbeck-street, the wife of Dr. G. M. Willoughby, of Llandudno, of a son.

DEATHS

COCHRANE.—On Nov. 29th, Colonel Edward Webber Warren Cochrane, D.S.O., late R.A.M.C.

PEACOCK.—On Nov. 29th, at The Lawn, Torquay, Henry George Peacock, M.R.C.S., L.R.C.P., in his 88th year.

ROGERSON.—On Nov. 22nd, John Thomas Rogerson, M.R.C.S. Eng., 1881; M.B. (Honours in Med.) and B.S., 1883; M.D., 1884; U. Lond. (Owens College, Manchester, University College, London, and Rotunda Hospital, Dublin), Assoc. Owens College, of Ballamillaghyn, Mount Rule, near Douglas, Isle of Man, aged 76 years.

FORBES WINSLOW.—On Dec. 2nd, 1933, at 3[illegible], Stanley-road, Hastings, Lieut.-Colonel Lyttleton Francis Forbes Winslow, late R.A.M.C., dearly loved husband of May Winslow, aged 61.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

WATER-SUPPLIES IN THE COUNTRYSIDE

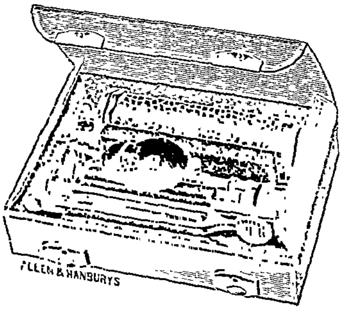
THE last of the present series of Chadwick lectures was delivered in London on Dec. 5th by Mr. J. H. Coste, chemist to the London County Council, and its subject was rural sanitation. He pointed out that in rural districts the water available for all purposes might be as little as 5 gallons per head per day, compared with 35 gallons or more in towns, and in dry periods it might fail altogether. Mr. Douglas Worger stated that over six million people in rural England are without piped water-supplies. A piped supply to individual houses cannot be available, in many districts, for some years, but, in Mr. Coste's opinion, there might well be a public supply in every village, if only in the form of a stand tap, spring, well, or pump, of good water—either initially good or adequately purified—with some storage. There might be a "water house" with a public fountain, a lavabo for domestic washing, such as one sees on the continent, baths and a large boiler of the kind now usually installed in houses, with a large storage tank over all. Every village near a fairly clean stream should have a safe bathing place, however simple. Small ponds and tank baths without filtration and chlorination are sanitary only when the use is very limited. The problem of isolated houses, said Mr. Coste, is more difficult than that of villages or institutions, especially when they are dependent upon shallow wells. Even then a good lay-out in relation to disposal of excreta and chlorination which can be made a simple process should in any case furnish a safe supply. The conservation of rainwater is to be recommended. When the water-supply is insufficient to allow the use of water carriage for excreta, disposal must be by means of a well-designed soakaway. Chemical closets or properly used earth closets are preferable to privies or cesspools. If a water-closet system can be used, treatment of the ripened sewage on land may in certain cases offer a simple solution; but if suitable land is not available combinations of anaerobic and aerobic processes must be adopted, and will, with care, and the avoidance of the use of disinfectants, be found satisfactory. Where land is dear and fairly skilled attention is available small activated sludge plants seem to offer the best solution of the disposal problem.

THE MOULTING OF INSECTS

MANY medical men are entomologists and may be interested in a scholarly article[1] by Dr. V. B. Wigglesworth, of the London School of Hygiene, on the structure of the skin and the physiological mechanism of moulting. As subject he has used the disgusting bug *Rhodnius prolixus*, which transmits the South American trypanosomiasis and has a convenient liking for living and breeding well in captivity. The skin is made up of an extremely thin outer layer (epicuticle) made of some firm substance not chitinous and apparently allied to the suberine of plants, and a much thicker laminated endocuticle composed of protein and chitin. The outer layer is in the adult insects impregnated with the same material as the epicuticle, and is thus hardly distensible, so that room is made in the insect for its enormous feeds of blood by an arrangement of pleats along the sides of the abdomen; in the nymph the cuticle is more distensible, and they can take in up to 12 times their own weight of blood at a single meal. As moulting approaches, the epidermal cells multiply and some of them become full of uric acid which is probably a waste product of the manufacture of the new cuticle. The dermal glands, which are formed anew at each moult, secrete the moulting fluid, the main function of which is to digest the old cuticle; it contains, therefore, proteinase and chitinase, the products of solution being absorbed into the body, and, if necessary, excreted by the usual channels. The whole tale is an excellent example of that elegant combination of refined microscopical technique, chemical testing, and functional interpretation for which the author is well known.

A NEUROLOGICAL DIAGNOSTIC SET

DR. R. LOUIS ROSE writes: The accompanying illustration shows a diagnostic set which I would like to bring to the notice of the increasing numbers of medical men interested in "nervous" disease. Contained very compactly in a thin leather case measuring only 7½×5×1¾", it consists of a large-handle ophthalmoscope, patella hammer, disc-foot tuning-fork, æsthesiometer callipers, and touch-and-pain tester. I have also had included both aural and nasal specula.



The set has been carried out to my design by Messrs. Allen and Hanburys Ltd., of Wigmore-street, London, W.1.

THE PHARMACEUTICAL POCKET BOOK

IT is now more than 25 years since Mr. John Humphrey edited the first Pharmacy Students' Pocket Note-book, of which the present comely volume is the twelfth edition. The eleventh was produced in 1925 by the science committee of the Pharmaceutical Society, a fact which is sufficient guarantee of its accuracy. The Pocket Book naturally begins with an account of the activities of the Pharmaceutical Society itself, passing on to the method of entering pharmacy and an account of the science and art of dispensing. The rest of the book is given up to methods of analysis and tables of weights, measures, scales, and equivalents. It seems, perhaps, rather perverse, when the British Pharmacopœia of 1932 has omitted imperial weights and measures in the formulæ of official products, for the Pocket Book to devote 50 pages to replacing them, but it seems that this concession will be valued by the pharmacist. A very valuable section of the Pocket Book for reference is the dictionary of synonyms and trade names in common use, which occupies 70 pages and contains at a hazard 3360 items. The present book has been edited by Mr. C. W. Maplethorpe with collaboration of several members of the Pharmaceutical Society's staff. The price is 5*s.* 6*d.* post free, from the Pharmaceutical Press, 23, Bloomsbury-square, London, W.C.1.

PROSTATIC BARS IN IDENTICAL TWINS

CONGENITAL median bar in twins is described by Dr. Otto J. Wilhelmi,[1] who divides prostatic bars into the following classes: (1) a sclerotic dam across the prostatic neck; (2) a fibrous bar which pulls down the inter-ureteric ridge close to the vesical orifice; (3) a glandular bar; and (4) a hypertrophy of Albarran's subcervical glands. The two patients were twins, 27 years of age, who were so much alike that they could hardly be distinguished from each other. They resembled each other not only externally but also internally, for when their bladders were examined with the cystoscope, identical malformations were found at the bladder necks. Another peculiarity was that the two boys started at about the same time to be annoyed by urinary symptoms. They were both subjected to vasoligation followed by resection of the bar under spinal anæsthesia. Both of them left the table with no bleeding and both were completely cured of their disability.

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[1] Quart. Jour. Microscop. Sci., 1933, lxxvi., 269.

[1] Jour. Amer. Med. Assoc., Sept. 9th, p. 847.

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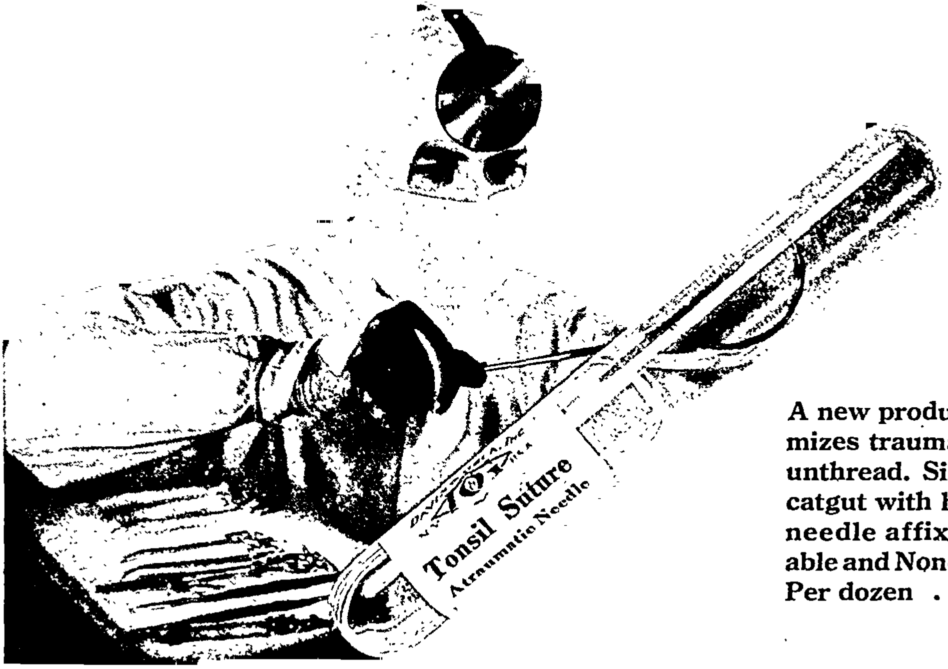

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ADDRESSES AND ORIGINAL ARTICLES

ELECTROSURGERY *

BY ARTHUR H. BURGESS, M.Sc. Vict., F.R.C.S. Eng., F.A.C.S. (Hon.), LL.D.

HONORARY SURGEON TO THE MANCHESTER ROYAL INFIRMARY; PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF MANCHESTER

HIGH-FREQUENCY electric currents have been used for many years for the destruction, by coagulation, of malignant and other neoplasms; but my interest in their employment for the section of tissues, in place of the scalpel, was not excited until a visit, in 1923, to the clinic of Prof. Gosta Forssell, at Radiumhemmet, Stockholm. There I saw the cancerous breast, with its overlying skin and underlying muscles and fasciæ, widely excised with the "diathermy" knife, but without any undermining of the skin flaps such as is usual in the modern "radical" operation for cancer of the breast: the extensive wound area thus exposed on the chest wall was then coagulated with a large flat electrode, and the coagulated tissues were left to become separated by nature, no attempt at closure of the wound being made. After their separation healthy granulations appeared and the wound healed by second intention, but only after many weeks. On my return I used the diathermy knife with increasing frequency for the excision of malignant growths, chiefly in the breast, tongue, mouth, pharynx, and rectum. In the breast I soon omitted the coagulation of the chest wall with the flat electrode, and used the diathermy knife much as I had formerly used the scalpel, undermining the skin for the usual distance, and suturing the skin flaps together at the conclusion of the operation. Primary union was usually obtained and the long delay in healing, inevitable in the Stockholm technique of that day, thereby avoided.

It was during a visit to the United States of America in 1927 that I first witnessed the use of the three-electrode thermionic valve in place of the spark-gap in high-frequency apparatus, with its superior "cutting" qualities. I purchased one of the American machines and in order to test thoroughly its possibilities I used it for two years in all my hospital and nursing-home operations—eliminating entirely the scalpel and using scissors only for the cutting of ligatures and sutures. It is on the foundation of this and subsequent personal experience that I base the opinions here expressed.

Varieties of Heating Current

It has long been known that when an alternating electric current of low frequency—such as the "50-cycles per second" current of most of our municipal electric mains—is applied to the animal body, certain physiological and chemical effects are produced causing hydrogen-ion concentration within the tissues and resulting in a degree of shock that may prove fatal, muscular contraction being a marked feature. d'Arsonval, in 1890, discovered that if the current be reversed more than 5000 times per second the muscular contractions became progressively feebler until at 10,000 per second they ceased altogether, after which the only effect produced in the tissues was that of heat. He did not himself recognise the practical value of this heat, and spoke of it as "chaleur désagréable," and it was left to Nagelschmidt, in 1897, to apply it therapeutically. This frequency of 10,000 is usually accepted as the dividing line between low-frequency and high-frequency currents, although very much greater frequencies are now used—even many millions per second. It has yet to be proved, however, that these extreme frequencies have any practical advantage, and a frequency of from one to five millions will suffice for all general surgical purposes. This high frequency of alternation ensures that the time of passage of the electric current through the tissues in one direction is too short to permit the development of the physiological effects associated with low-frequency currents, since such, at their inception, are immediately neutralised by the passage of the current into the opposite phase. That to the frequency of the *alternations* and not to the frequency of the *interruptions* is due the absence of these physiological effects has been proved by Cluzet and Chevalier[1]: by means of four radio-transmitting valves arranged in series they abolished one half-phase of the alternations, thus rendering the current unidirectional while at the same time keeping its interrupted character, and under these conditions they found that muscular contractions occurred and even tetanisation of the muscles. The sole purpose, indeed, of the "high" frequency is to ensure, with greater certainty, the avoidance of all those physical, physiological, and chemical effects which are inseparable from "low" frequency, with the exception of heat. The heat generated is due to the resistance of the tissues to the transit of the high-frequency current, and since it is created entirely within them it is sometimes referred to as "endothermy." The degree of heat can be carefully regulated from the gentle heating of large portions or even the whole of the body, such as is required in "medical diathermy" to the intense heating with its localised destructive effects required in the various types of "surgical diathermy"—fulguration, dehydration, electrocoagulation, electrosection. This heat is produced by the friction of innumerable ions oscillating within the tissues, and it is upon the variations in its intensity and especially in the rapidity of its creation that the different effects upon the tissues—dehydration, coagulation, or section—are brought about.

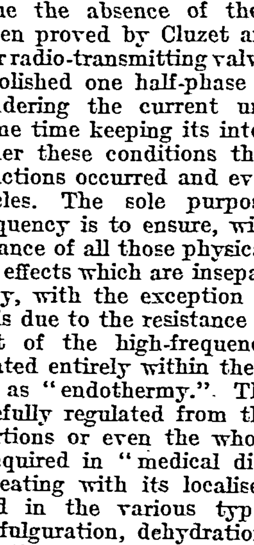

FIG. 1.—"Oscillating" circuit.

The apparatus for producing these high-frequency currents may utilise either a "spark-gap" or a "three-electrode thermionic valve" (designated "triode valve" for brevity). The spark-gap type was that originally employed, and an essential component of such an apparatus is an "oscillating" circuit, consisting of (1) a condenser, (2) an "inductance" or "solenoid," and (3) a spark-gap (Fig. 1). The condenser is charged, usually from the alternating current mains, the voltage of which—230 volts being standard for this country—is first greatly increased through a "step-up" transformer (Figs. 3 and 4). When the charge upon the plates of the condenser reaches an intensity sufficient to overcome the resistance of the air-space in the spark-gap, the current flows across the gap in the form of a spark which, although appearing to the eye as a single spark, is in reality, as can be shown in a rapidly revolving mirror, a succession of sparks in opposite directions, the current surging forwards and backwards alternately—i.e., it is said to "oscillate." Owing to the losses of current caused by the resistance of the circuit and of the air-gap, the extent of the oscillations progressively and rapidly diminishes, and they disappear altogether in from six to ten sparks; the voltage, which was very high at the start of each train of oscillations, becomes very low at the finish, so that the tension of the current is constantly varying. Such oscillations are said to be "damped" (see Fig. 2). The whole train of oscillations occupies about 1/50,000th of a second, and is finished well before the half-cycle of the alternating current (50 cycles per second) is concluded. In fact, in the time (1/100th of a second) occupied by this half-cycle there is room for numerous recharges and redischarges of the oscillatory current (see Figs. 5 and 6). We are thus confronted with two aspects *of frequency: firstly, the number of actual oscillations in each group during each spark discharge; and, secondly, the number of such groups that occur in each half-cycle of the alternating current from the mains—i.e., the frequency with which the condenser discharges.* Since there is a definite interval between each train of oscillations during which no current flows, these oscillations are said to be "unsustained." The wider the spark-gap the greater is its air-resistance, and the longer the time taken for the condenser to become charged sufficiently highly to bridge the gap; the frequency is thus lessened as is the amperage, but, on the other hand, when the current finally succeeds in bridging the gap

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* The Bradshaw lecture delivered at the Royal College of Surgeons of England on Dec. 14th.

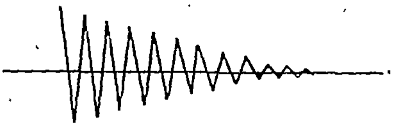
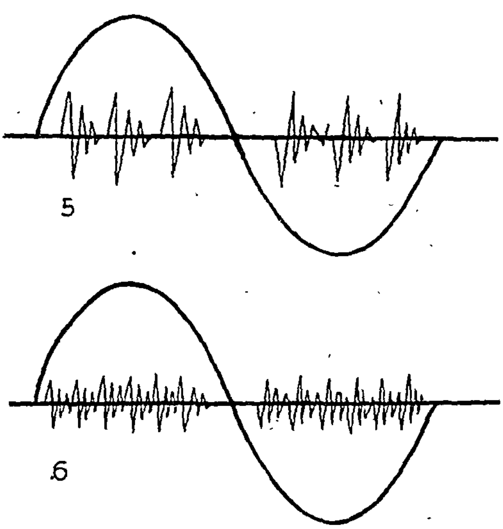


FIG 2.—"Damped" wave-train.



FIGS. 5 and 6.—Fig. 5, "damped" and "unsustained" wave-trains. Fig. 6, "damped" and "sustained" wave-trains.

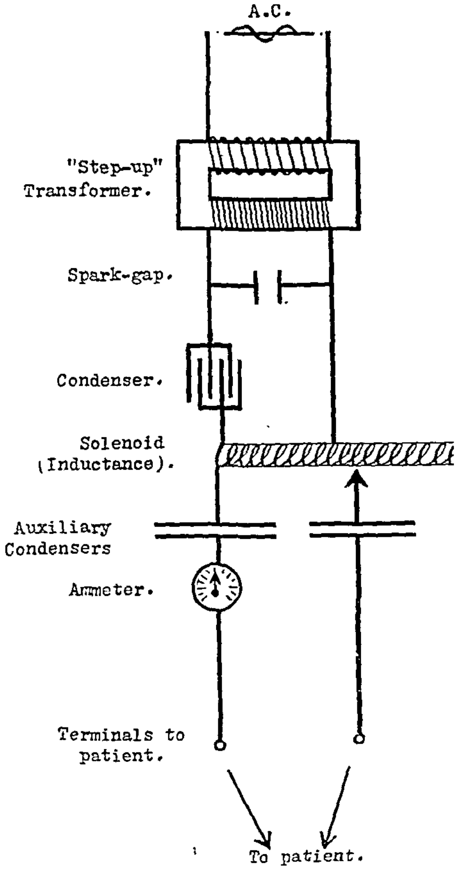


FIG. 3.—Plan of "spark-gap" H.F. apparatus for "surgical" diathermy.

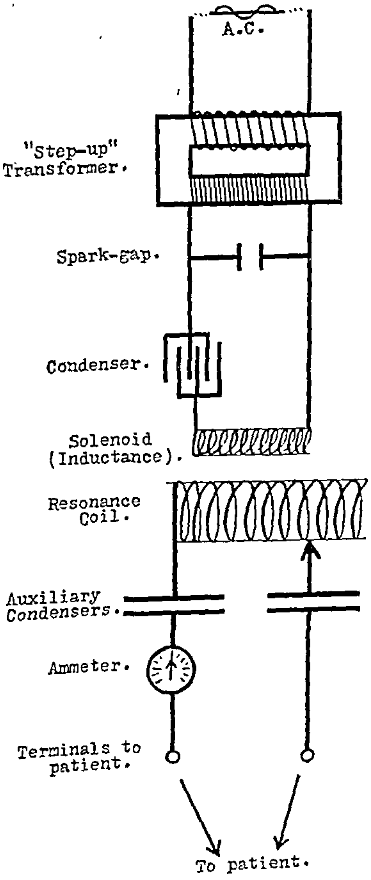


FIG. 4.—Plan of "spark-gap" H.F. apparatus for "medical" diathermy.

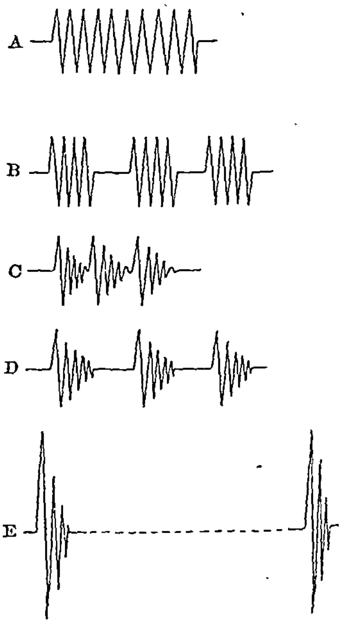


FIG. 7.—Graphic representation of currents oscillating with high frequency. A = oscillations undamped and sustained; B = oscillations undamped and unsustained; C = oscillations damped but sustained; D = oscillations damped and unsustained; E = oscillations damped and unsustained, but with long intervals between periods of oscillation.

(Reproduced from Dr. E. P. Cumberbatch's "Essentials of Medical Electricity," published by Messrs. Henry Kimpton, London.)

its voltage will be correspondingly higher. Vice versa, the narrower the spark-gap the greater will be the frequency and the amperage, but the less the voltage. Hence apparatus for "medical" diathermy have wide spark-gaps or, what amounts to the same thing, a number of narrow spark-gaps arranged in series; here high voltage is essential to overcome the resistance of the large masses of tissue through which the current has to pass. In electrosurgery, on the contrary, only a comparatively superficial action of the current is required, and there is therefore no need for so high a voltage; a narrow spark-gap is employed and the frequency of the trains of oscillations is correspondingly greater. If the spark-gap be so narrow that the trains of oscillations follow each other without interval we obtain a sustained and damped current (Fig. 7). Besides the size of the spark-gap other factors influence the frequency of the oscillations, notably the capacity of the condenser and the amount of self-induction of the solenoid; the smaller these are the shorter will be the duration of each train of oscillations, but the greater their frequency.

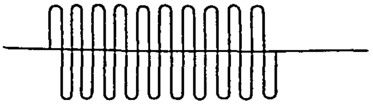


FIG. 8.—"Undamped" and "sustained" wave-train from triode valve apparatus.

The type of current yielded by the triode-valve apparatus is of the sustained and undamped form, in which the amplitude of each oscillation is precisely the same, and the oscillations follow each other with perfect regularity (Fig. 8). The nearest approach to this completely undamped wave that can be obtained from any apparatus of the spark-gap type is the sustained and damped wave-train already referred to (Fig. 7).

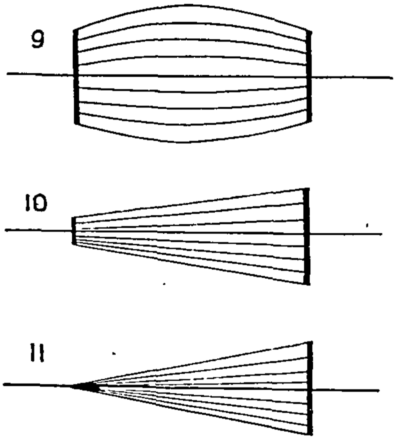
Construction of High-frequency Apparatus

The general plan of a modern high-frequency apparatus of the spark-gap type is shown in Figs. 3 and 4. The alternating current supply from the municipal mains first has its voltage greatly increased by means of a step-up transformer; this current of high voltage then charges a set of condensers, which discharge across the spark-gap and, in doing so, excite oscillations of enormous frequency in the oscillating circuit, including the solenoid; by means of a contact sliding along the solenoid any desired strength of the high-frequency current is then conveyed, usually through auxiliary condensers, to the terminals for the patient. In apparatus for medical diathermy an additional coil (the "resonance" coil) is interposed between the solenoid and the patient (Fig. 4), this coil being completely insulated from the solenoid, from which it is charged by electro-magnetic induction.

If the two electrodes applied to the patient are of large and equal size and are placed on opposite aspects of the body or of a limb, as obtains in medical diathermy, the current will flow directly between them, widening out towards the middle of its course (Fig. 9); the degree of heat developed suffices to stimulate the tissues, but never to cause their coagulation. Immediately beneath each electrode the increased temperature of the tissues is of the same degree, but that of the tissues intervening between the electrodes will vary according to the differences in resistance they offer to the passage of the high-frequency current. Wildermuth[2] compares the specific resistance of the tissues with that of a physiological solution of chemically pure sodium chloride at a temperature of 18° C., which he takes as the unit; he estimates the resistance of the various tissues as:—

Fatty tissue	19·4	Skin	2·5 to 3·0
Brain	5·5 to 6·8	Muscle	1·2 to 1·5
Lung	3·5 to 4·0	Blood	1·0
Liver	2·8 to 3·3		

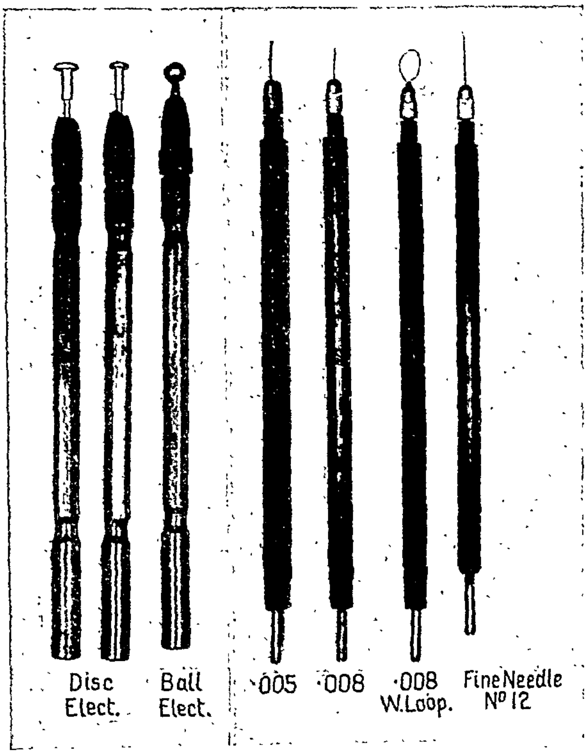
The resistance of the tissues varies also with their degree of vascularity and their state of physiological activity; dead tissues are less resistant than living tissues.



FIGS. 9–11.—Lines of flow of H.F. currents: Fig. 9, with electrodes of large and equal size. Fig. 10, with electrodes of unequal size. Fig. 11, with a fine point as the active electrode.

If the electrodes are unequal in size (Figs. 10 and 11) the higher degree of heat is produced at the smaller—the "active" electrode—and the greater this difference the greater will be that in temperature in the immediate vicinity of the two electrodes. In electro-surgery one—the "indifferent"—electrode is a large plate of malleable metal or of metallic gauze, and is applied to the skin of a limb or of some part of the trunk distant from the area of operation; it is bandaged firmly either directly to the skin or with the intervention of several folds of lint soaked in strong saline solution. The other, the "active" electrode, is a small metal disc or knob where coagulation is the effect desired, or a fine-edged knife, needle, or piece of fine wire where cutting is intended. The actual cutting of the tissues is effected by a small electric arc which forms immediately in advance of the electrode, and which splits the tissues by molecular dissolution; there is no need for actual contact between the electrode and the tissues, and still less for any pressure of the electrode upon them such as is required in scalpel surgery. No advantage accrues, therefore, in using a knife as the active electrode, be it never so finely edged, since the tissues are severed before it comes in actual contact with them. After experimenting with numerous kinds and shapes of active electrodes—knives, needles, wires—constructed of various metals, I now use fine tungsten wire only: 0·005 gauge for the skin and 0·008 for the deeper tissues. The finer the electrode and the more closely it approaches a theoretical point the more certain is a purely cutting effect, free from coagulation. A fine needle as the active electrode has the advantage over fine wire of stiffness, and therefore of better control, but since it must necessarily be of wider bore than the fine sizes of tungsten wire already referred to it produces correspondingly greater coagulation. Further, to obtain the purest cutting effects the electrode must be drawn rapidly across the tissues, for if allowed to rest at any spot coagulation will there occur. Obviously, then, the technique of electrosection is very different from that of scalpel surgery, and considerable practice and experience are required to avoid any pressure of the electrode upon the tissues, to acquire the correct speed of its passage across them, and to gauge the strength of current requisite for their clean division having regard to the very different resistances they offer to the high-frequency current. Not realising these points some surgeons, after a trial much too short to enable them to form a correct idea of its possibilities, have abandoned electrosection in disgust.

FIGS. 12 13



FIGS. 12 and 13.—Fig. 12, "active" electrodes for electro-coagulation. Fig. 13, "active" electrodes for electro-section (tungsten wire).

Action on the Tissues

Using the undamped high-frequency current from a triode valve machine and applying it with a light and rapid stroke of the 0·005 gauge tungsten wire electrode, the skin, held preferably slightly on the stretch, can be divided as cleanly as with the sharpest scalpel, with no charring or coagulation of the edges that is visible to the naked eye, and with only just sufficient microscopic coagulation to seal up the lymphatics and capillaries, and to "cap" and obtund the sensory nerves. Such an incision can heal by the most perfect primary union, leaving a scar indistinguishable from that after a scalpel incision, and with decidedly less pain during the healing process. For the deeper tissues the 0·008 wire gives a slightly greater degree of coagulation without, however, preventing primary union. These deeper tissues are divided more quickly or more slowly than the skin according to their comparative resistance, fatty tissue being the most resistant and the slowest therefore in division. Time is gained by increasing the strength of the current when dividing the resistant tissues, and this is especially noticeable in the "radical" breast operation, where the extensive undermining of the skin-flaps has to be carried out entirely in the plane of the resistant superficial fat. Muscle is definitely less resistant than the skin, and for its division the current should be diminished, as otherwise muscular twitchings, from "undertones" of the oscillations, may hinder progress. In spite of the claims made by their manufacturers, of the many machines I have tested personally I have not yet found one giving a cutting current from which muscular contractions are entirely eliminated. With some machines this muscular twitching is so marked as to entail the risk of structures being forced against the electrode and divided unintentionally, as when in performing laparotomy twitching of the rectus abdominis may lead to premature incision of the peritoneum and even of an underlying viscus. Cartilage is little resistant and can be divided with the greatest ease, while bone is so highly resistant that, although it may be "cooked" and rendered friable, it cannot be cut. Liver and kidney offer but slightly greater resistance than the skin, and incisions made into them with the cutting current heal well. Moreover, the tissues in the immediate vicinity of the incision seem to be rendered less friable than is normal, so that these incisions can be sutured more firmly and more accurately than those made with the scalpel, besides showing definitely less hæmorrhage.

For electrocoagulation, in contrast to electrosection, the requisite conditions are very different, and in obtaining the most perfect manifestation of each the essential differences may be tabulated thus :—

Electrosection requires—	*Electrocoagulation* requires—
1. Very high frequency.	1. Lower frequency.
2. Short wave-length.	2. Longer wave-length.
3. Lower voltage.	3. Higher voltage.
4. High amperage.	4. Lower amperage.
5. "Undamped" wave.	5. "Damped" wave.
6. Very fine electrode (fine wire).	6. Larger electrode (needle, button, plate).
7. Electrode moved quickly over tissues.	7. Electrode moved slowly, or held in contact.
8. Triode valve apparatus.	8. Spark-gap apparatus.

The greater the cutting power of any given current the less is its coagulating power, and vice versa. It cannot, in fact, be too clearly recognised that cutting and coagulation are definitely antagonistic processes,

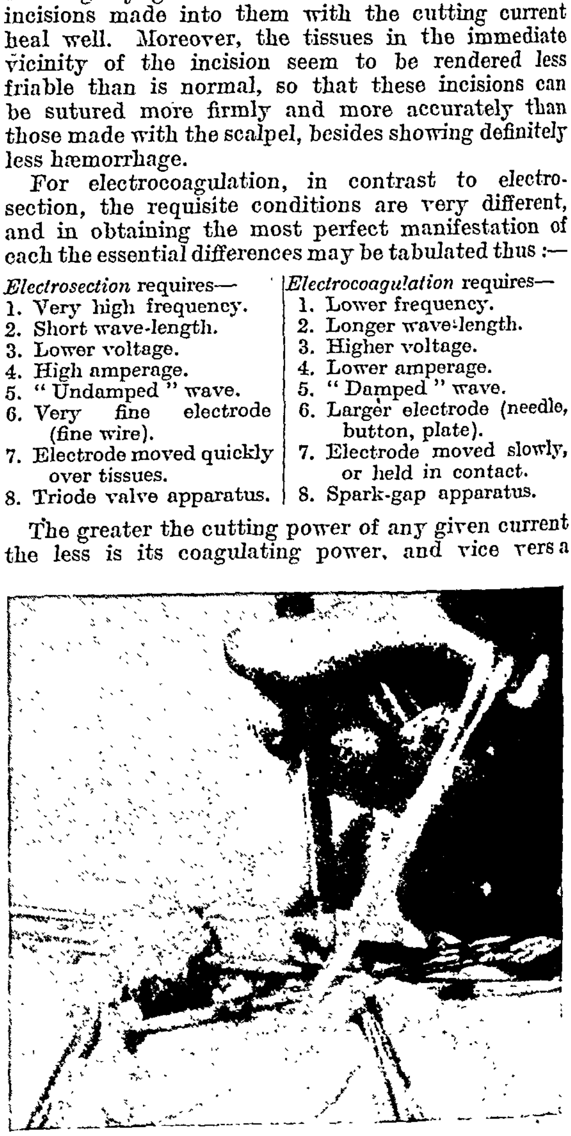


FIG. 14.—Coagulation of a blood-vessel, temporarily occluded with artery forceps, by touching the forceps with the active electrode charged with the "coagulating" current.

and the type of current yielded by most of the commercial machines is a compromise between them. The purely undamped wave—the best for electrosection—cannot be produced by any spark-gap machine but requires a triode valve apparatus. Nevertheless, by superimposing the wave-trains from a spark-gap machine closely upon one another a type of wave can be obtained which approximates to, though it never reaches, the even character of the purely undamped wave. On the other hand, the strongly damped wave—the best for electrocoagulation—is most suitably obtained from a spark-gap machine, although by varying the voltage and amperage of a triode valve current the wave-train can be so modified as to yield a satisfactory coagulating current. The conclusion to be drawn from all this is that while fairly satisfactory electrosection and electrocoagulation can both be obtained from either type of machine, a triode valve is necessary for the most perfect exhibition of electrosection and a spark-gap for that of electrocoagulation. Since, to my mind, it seems the more important for general surgical use to obtain good cutting and primary union of the wound, I believe that the future lies with the triode valve apparatus. It is comparatively recently that such machines have been produced in this country, though long in use in America and France. In the latter, Bordier has been especially prominent in developing the triode valve apparatus which, he states, has the advantages of lower consumption of current and greater output, yielding more than double the wattage of the best spark-gap machine for the same amperage and voltage fed into it; moreover, it is quite silent while a spark-gap is always more or less noisy, no odour of ozone or oxides of nitrogen is emitted, and no coal-gas or alcohol is needed such as some spark-gaps require. Theoretically the ideal would be the use of both types, the surgeon performing the cutting portion of the operation with the triode valve apparatus, and his first assistant following with the coagulating current from a spark-gap machine and coagulating any bleeding points; this is sometimes carried out. In most machines, however, the two types of current are produced separately, and either can be switched on at will to the same active electrode. In general surgery the coagulating current is used nowadays almost exclusively for the arrest of hæmorrhage. The coagulation of large masses of tissue, leaving the coagulated portion to separate naturally—a method much in vogue in the early days of surgical diathermy—is seldom now employed: owing to the varying resistances of the tissues it is impossible to predict the direction and extent of the resulting coagulation, so that on separation of the coagulated tissues it may be found that there has been unexpected necrosis of the wall of one of the larger blood-vessels—with resultant secondary hæmorrhage. Where a large mass of tissue has to be removed it is better practice to excise it with the cutting current and employ the coagulating current to arrest hæmorrhage from the cut surface. With the cutting current there is rather less hæmorrhage from the capillaries than with the scalpel, and this soon ceases. Vessels of any size, however, require to be picked up with artery forceps and, at the conclusion of the operation either ligatured in the ordinary way or "coagulated" by lifting the forceps away from contact with any other instrument or tissue and touching it for a few seconds with the electrode charged with the coagulating current. On removing the forceps the coagulated vessel is gently wiped with a swab, when the bleeding will usually be found arrested; should it, however, restart, it is better to seize the bleeding point again with forceps and ligature it. Single small spouters in the course of dissection may be seized with the teeth of the dissecting forceps usually held in the left hand and coagulated by touching the forceps with the coagulating current. This closure of vessels by coagulation can be effected very rapidly as compared with ligation, and in an extensive operation such as that for breast carcinoma considerable time can be saved. It is preferable, however, to ligate branches divided close to a large parent vessel, such as the axillary, since, although they can be securely closed by coagulation yet there is a risk that the process may occasionally extend to the junction with the parent trunk, and result either in its thrombosis, or in secondary hæmorrhage.

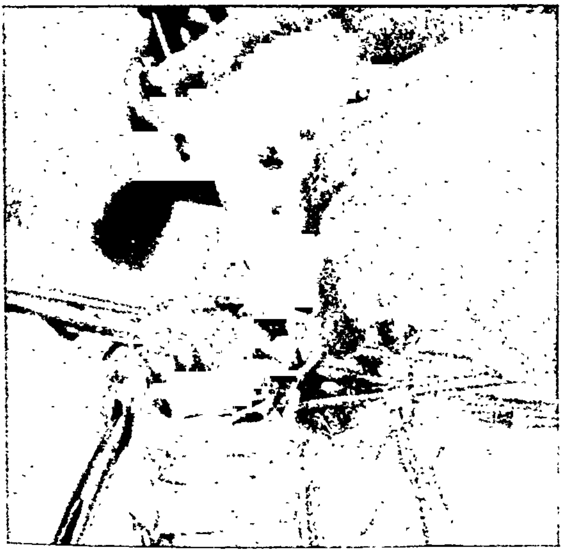


FIG. 15.—Coagulation of a bleeding-point by picking up with the teeth of dissecting forceps, which is then touched with the active electrode charged with the "coagulating" current.

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(To be concluded)

HOSPITAL SAVING ASSOCIATION: ANNUAL REPORT.—At the eleventh annual meeting of group representatives of this association recently, Sir Alan Anderson, the chairman, who presided, reviewed the progress made. He said that in ten years the association had paid £2,355,000 for hospital services and had built up, almost entirely out of weekly threepences, an income which is now approaching £750,000 a year. During the year under review there was a net increase of 129,000 contributors and of over £74,000 in income. He added that the figures with regard to the association's patients treated at the London hospitals lent no support to the assumption that the association's contributors were deserting their doctors in order to obtain general practitioner treatment at hospitals. Many group secretaries resented the imputation that they were damaging—let alone ruining—a profession which they respected and admired. During the year the association had paid over £468,000 for hospital services, and authority had now been given to add to the distribution to voluntary hospitals a little over £33,000. The total represented an increase of £60,000 on the previous year. Extra hospital benefits cost £86,500.

ARTIFICIAL PNEUMOTHORAX TREATMENT

SOME RESULTS AND CONCLUSIONS

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ARTIFICIAL pneumothorax has been steadily growing in popularity during the past few years, but it is still employed sparingly by some workers. Fishberg,[1] with his vast experience in America, considers that hardly 5 per cent. of tuberculous patients can be regarded as suitable for the treatment, while Heaf[2] has recently drawn attention to the misuse of artificial pneumothorax both clinically and administratively. Many favourable statistics have, indeed, been published, but it is difficult to obtain absolute proof by such means. In fact, it has been suggested by Shaw[3] that an experience of statistical dimensions actuarily treated is practically impossible. One difficulty is that medical superintendents of institutions are seldom responsible for the treatment of patients on discharge, and often find it difficult to follow up their cases.

The present paper deals with men, drawn almost exclusively from one dispensary area with a population of about 345,000, who received their treatment from the dispensary officer at the Peel Hall hospital situated in the same area and subsequently returned as out-patients for refills at the dispensary. Moreover, almost all the men patients in the hospital are drawn from the area in question, so that it has been possible to gain some idea as to the suitability for artificial pneumothorax of such patients from a sample population, and to keep in close touch with those in whom this treatment has been instituted. Since 1928, when an X ray apparatus was installed, the possibility that this form of treatment might be beneficial has been considered in relation to each patient admitted.

Artificial pneumothorax—the greatest advance in treatment since the inception of the sanatorium[4]—is, in fact, a particular application of the fundamental principle of sanatorium treatment—viz., rest. By compression of the lung, through the introduction of air into the pleural cavity, local rest of the affected part is obtainable. In practice the possibilities of applying the treatment are limited. Severe bilateral cases have usually to be excluded,[5] and in patients with less extensive disease the introduction of air is frequently impossible owing to adhesion of the diseased lung to the chest wall. The success of the treatment in certain acute forms of unilateral disease is often marked, but many types of case are unsuitable, and the majority of experienced workers agree that artificial pneumothorax should not be lightly undertaken. Apart from the duration of treatment[6] (refills necessary at intervals for about three years), each individual patient requires special consideration, not only as regards suitability but subsequently before each refill.[7]

SELECTION OF CASES

Recent unilateral cases with comparatively slight involvement of the opposite lung are particularly suitable, especially in young subjects. Some of the most dramatic results are seen in such patients. High fever disappears, sputum is lessened, and the condition steadily improves. Good results are also frequently obtainable in patients with more extensive lesions, dependent upon the amount of fibrosis and the closure of cavities, if present. On the other hand, patients with much fibrosis, and particularly those of middle age, should not be given artificial pneumothorax as they are apt to be made worse by it. The point as to how long it is desirable to wait before induction is debatable. If a patient is doing well with bed-rest there is no advantage in initiating a form of treatment which, owing to its duration and possible complications, may prove troublesome.

There is an impressive weight of opinion in favour of a preliminary period of conservative or sanatorium treatment, and its advocates include Gravesen,[8] Saugman,[9] Matson,[10] and Pearson.[11] Burrell,[12] however, considers that the percentage of real recoveries would be increased if all cases with tubercle bacilli in the sputum and definite signs of unilateral disease had artificial pneumothorax induced at once, instead of waiting to watch the results of an actual period of simple medical treatment. The patients in the Peel Hall hospital are invariably requested, as soon as tuberculosis is diagnosed, to remain in bed at home until their turn for admission to the hospital arrives, so that it is usually possible to reach a decision as to their suitability for artificial pneumothorax treatment soon after they are admitted, as a comparison can be made between the clinical and radiological evidence obtained on diagnosis and on admission after a period of bed-rest.

In the majority of cases bacilli were found during the course of the illness. Since the utilisation of good skiagrams has, in combination with clinical evidence, placed diagnosis on a more satisfactory basis than obtained in pre-radiology days, it is not my practice to wait until bacilli are demonstrated in the sputum, as valuable time may thereby be lost. In fact, as will be shown later, the percentage of negative sputum cases alive after a given time was found to be twice as high in those who received artificial pneumothorax as in those where this was unsuccessful or abandoned.

It is convenient to subdivide possible cases of pneumothorax into classes representing degrees of suitability for this form of treatment. In this connexion it is generally agreed that the extent of the disease should be considered with definite reference to the presence or absence of cavitation in the lung chosen for collapse, and the presence or absence of disease in the better lung, both founded on a combination of radiological and physical findings. In connexion with a proposed investigation of the results of the particular "T.B. plus" cases, a subcommittee of the Joint Tuberculosis Council, which has this matter under special consideration, has suggested the following classification of "choices":—

Choice A.—Cases of unilateral disease without definite evidence of cavitation, the other lung being clear.

Choice B.—Cases with evident cavitation in one lung only and with or without limited lesions in the opposite lung, such limited lesions not involving more than one-third of the lung.

Choice C.—All other cases, including cases with severe complications, such as advanced laryngeal disease.

This paper deals with 143 men in whom inductions were attempted from January, 1929, onwards. Four cases, being untraced at the end of 1932, are excluded from the tables.

Table I. shows the age-groups of the 139 patients. The youngest patient * was a boy of fifteen years, with tubercle bacilli in the sputum; the oldest patient

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* This year I have given artificial pneumothorax to a boy, aged 8, whose sputum contained tubercle bacilli, so far with excellent result.

TABLE I.—*Ages of the Patients*

Age-periods (years).	T.B. plus.	T.B. minus.	Total.
Under 20	11	6	17
20 to 30	30	18	48
30 to 40	31	7	38
40 to 50	21	8	29
50 and over	6	1	7
Totals	99	40	139

was 55. Unless the disease is acute and progressive it is well to hesitate before making inductions in the elderly. Table II. shows the side mainly involved :—

TABLE II.—*The Side Involved*

Side.	T.B. plus.	T.B. minus.	Total.
Right side	45	23	68
Left side	52	17	69
Bilateral	2	—	2
Totals	99	40	139

TECHNIQUE

The pneumothorax apparatus designed by Peter Edwards[13] has been found simple, effective, and reliable. Treatment is given in bed at first, and subsequently in a special treatment-room, X ray screening beforehand being the rule, with skiagrams at intervals. An injection of omnopon, gr. $\frac{1}{6}$, is given subcutaneously half an hour previously. Local injections of 2 per cent. novocain with 1 : 100,000 adrenaline are given at the induction and before the first two refills, and are then discontinued. The first three refills are given at daily intervals; thereafter every other day, the period being gradually lengthened to a maximum interval of two to three weeks. At first, 300 c.cm. of air are given, and this may be increased to 500-600 c.cm. Small and frequent refills are preferred, as the result is more likely to be collapse of the diseased portions only (selective collapse) while, in addition, effusions tend to occur much less frequently than have been reported when big refills at long intervals (6 to 8 weeks) were in vogue. In my series effusions, requiring gas-replacement on one or more occasions, occurred in 20 cases.

Artificial pneumothorax is often advantageously combined with other forms of treatment and is, of course, superadded to the sanatorium régime of the hospital. In agreement with the experience of Burrell[14] and others, sanocrysin has been found of benefit in some cases, where the disease has spread to the opposite lung, and the phrenicectomies performed by Mr. Morriston Davies[15] on over 50 of my cases have also been found useful where the degree of collapse was slight or inadequate. (The word phrenicectomy is used to include cases where phrenic evulsion was done. The latter operation, which aims at a gradual evulsion of the whole of the nerve, has been latterly modified by Mr. Davies. He now removes a segment of the nerve and divides such accessory phrenic nerves as can be found—phrenicectomy.) This operation avoids the risk of pain, injury to lung, or hæmorrhage, which may occasionally follow evulsion.

RESULTS

It is no easy matter to evaluate the results of any given form of treatment by methods likely to satisfy a statistician, especially where, as in the present instance, the numbers are relatively small and the time interval is rather short. Moreover, in comparing the results of different workers, a number of complicated factors have to be taken into account. Such factors as selection of cases, technique, and association with other forms of treatment all complicate the issue.

The figures presented relate to the condition at the end of 1932 of 139 men in whom inductions were attempted from January, 1929, onwards. It will be noticed that tables for T.B. plus cases and T.B. minus cases have been given separately. Various forms of treatment are seen to have been combined with artificial pneumothorax. The particular criteria taken are: (1) whether or no the patient was alive at the end of 1932, (2) whether the patient was working or fit for work, (3) whether, in T.B. plus cases, bacilli had disappeared from the sputum at that date.

As a basis of comparison, cases where sufficient air was regularly induced for a period of at least three months to obtain a satisfactory collapse are contrasted with corresponding cases where the induction was unsatisfactory or was soon abandoned owing to adhesions. This, however, is not really a satisfactory criterion, though it is difficult to devise a better, as the number of patients in the hospital in whom inductions were attempted was only 28 per cent. of the admissions of definitely tuberculous cases. Unsuccessful induction is nearly always due to fibrosis, and as the formation of fibrous tissue is evidence of a healing process or tendency it is reasonable to expect that in such cases the fibrosis, unsuspected perhaps at the time, will lead to healing of the lesion. We are thus comparing our successfully induced cases with cases where, from the nature of the condition, a satisfactory result is not unlikely. It follows that the results of artificial pneumothorax will appear in a relatively less favourable light than if one could compare the results of treatment in two exactly similar groups of cases, the one receiving the treatment, the other not.

In the following Tables the cases are subdivided under choices, as described above in dealing with selection of cases, but the numbers under these separate headings are too few to enable definite conclusions to be drawn therefrom. A register is being kept whereby the condition of all patients in whom artificial pneumothorax has been attempted will be noted at the end of each year, and it is hoped that, as the numbers and time factor increase, useful information will be obtained.

Table III. shows: (1) That of the T.B. plus cases satisfactorily induced 42 per cent. were working or fit, and 22 per cent. were dead; 11 out of 46 living cases had gas replacements, as compared with 5 out of 13 deceased. (2) That there was a similar number of 40 per cent. working or fit out of 31 T.B. plus cases where induction was unsuccessful, but it must be particularly noted that in 19 of these phrenicectomy was done, and of the 19, 11, or 58 per cent., were working or fit. This form of treatment, added to a tendency towards fibrosis or healing, thus appears to give results comparable with those obtained by artificial pneumothorax in more acute cases. In addition, 22 per cent. were dead and none of these had had phrenicectomy.

Table IV. deals with 26 T.B. minus cases where a satisfactory collapse was obtained; 69 per cent. were working or fit, and 8 per cent. deceased. It also shows where induction was unsuccessful. Of 14 T.B. minus cases, of whom 8 had phrenicectomy, 36 per cent. were working or fit while 21 per cent. were dead.

Table V. shows that up to the end of 1932, 78 per cent. of 46 "satisfactory" cases lost their bacilli as compared with 64 per cent. of 31 cases unsuccessfully induced. Note, however, that phrenicectomy was done in 19 of the latter 31, and of these 13, or 68 per cent., had lost their bacilli.

TABLE III.—*Patients with Positive Sputum*

Position at the end of 1932 of 99 artificial pneumothorax patients with positive sputum treated at the Peel Hall Pulmonary Hospital from January, 1929, onwards.

(A) SATISFACTORY INDUCTIONS

—	Choice.			Total.	
	A.	B.	C.	No.	Per cent.
Working or fit for work	4	14	7	25	42
Unfit for work	2	11	8	21	36
Additional measures—					
Gas replacements	1	2	3	6	..
Phrenicectomy	—	1	2	3	..
Gas replacement and phrenicectomy	—	—	2	2	..
Phrenicectomy and scalenectomy ..	—	1	1	2	..
Gas replacement, phrenicectomy, and cleothorax	—	1	—	1	..
Gas replacement, phrenicectomy, and scalenectomy	1	—	—	1	..
Gas replacement and cleothorax ..	—	1	—	1	..
Dead	2	6	5	13	22
Additional measures—					
Gas replacements	2	2	1	5	..
Sanocrysin	—	—	1	1	..
Total	8	31	20	59	..

(B) UNSUCCESSFUL INDUCTIONS

Working or fit for work	8	5	3	16	40
Unfit for work	—	8	7	15	38
Additional measures—					
☞Phrenicectomy	4	8	7	19	..
Dead	1	3	5	9*	22
Additional measures—					
Gas replacement	—	1	—	1	..
Total	9	16	15	40	..

* None of these had phrenicectomy.

The percentage working or fit for work is almost the same for patients who had artificial pneumothorax satisfactorily induced as for patients who had an unsuccessful induction, although in the latter group 19 of the 31 had phrenicectomy. Eleven of the 19 were working or fit. Phrenicectomy, added to a tendency towards fibrosis or healing, appears to give results comparable with those obtained by artificial pneumothorax in more acute cases.

TABLE IV.—*Patients with Negative Sputum*

Position at the end of 1932 of 40 artificial pneumothorax patients with negative sputum treated at the Peel Hall Pulmonary Hospital from January, 1929, onwards.

(C) SATISFACTORY INDUCTIONS

—	Choice.			Total.	
	A.	B.	C.	No.	Per cent.
Working or fit for work	11	3	4	18	69
Unfit for work	1	3	2	6	23
Additional measures—					
Gas replacements	—	—	2	2	..
Phrenicectomy	—	2	—	2	..
Gas replacement and phrenicectomy	—	1	—	1	..
Dead	—	1	1	2	8
Total	12	7	7	26	..

(D) UNSUCCESSFUL INDUCTIONS

Working or fit for work	2	2	1	5	36
Unfit for work	2	1	3	6	43
Additional measures—					
Phrenicectomy	3	3	2	8	..
Dead	2	—	1	3	21
Total	6	3	5	14	..

Note a remarkable difference between the cases with a satisfactory induction and those with an unsuccessful induction in regard to the percentage working or fit for work—69 per cent. against 36.

TABLE V.—*Bacillary loss as at the end of 1932 of T.B. plus cases treated by Artificial Pneumothorax*

(E) SATISFACTORY INDUCTIONS

—	Choice.			Total.	
	A.	B.	C.	No.	Per cent.
Sputum still positive	—	3	7	10	
Sputum become negative	2	15	4	21	}78
Sputum now absent	4	7	4	15	
Total	6	25	15	46	..

(F) UNSUCCESSFUL INDUCTIONS

Sputum still positive	1	4	6	11	
Sputum become negative	1	4	2	7	}64
Sputum now absent	6	5	2	13	
Total	8	13	10	31*	..

* Note.—In 19 of the 31 phrenicectomy was done. In 13 of the 19, or 68 per cent., the sputum became negative or absent.

DISCUSSION

Artificial pneumothorax was attempted in 139 out of 487 admissions of definite cases of pulmonary tuberculosis—i.e., 28 per cent. A satisfactory collapse was obtained in 59 out of 99 T.B. plus cases, and in 26 out of 40 T.B. minus cases—i.e., in 17 per cent. of the total cases admitted. The tables show that, of patients so treated, a considerable number of men were working or fit, and had lost their bacilli at the end of 1932. This disappearance of bacilli has a distinct bearing on public health, because thereby important sources of infection are removed. There is reason to believe that in my dispensary area more T.B. plus cases are alive, relatively to the total number of tuberculous patients, than before the introduction of collapse therapy, and the impression that such patients live longer is thus strengthened. Their regular attendance at the dispensary for refills is noteworthy, and by their obvious improvement in health they help to raise the morale of their fellow-patients, both in hospital and as out-patients. This in itself is significant. The results in the T.B. plus cases of artificial pneumothorax satisfactorily applied and in cases with fibrosis where this was impossible (but where in 19 out of 31 phrenicectomy was done) show a striking similarity. It thus appears that we must regard artificial pneumothorax as but one aspect of collapse therapy, which includes phrenicectomy and, occasionally, thoracoplasty.

SUMMARY

1. Artificial pneumothorax is a valuable adjunct to treatment in an appreciable, but limited, number of patients. It assists restoration to working capacity and leads to the disappearance of bacilli from sputum in a great many cases.

2. The benefits of this treatment are thus not limited to the patient, but have an important bearing on prevention.

3. Artificial pneumothorax is a form of collapse therapy and must be considered in relation to other forms. In cases unsuitable for this treatment good results are often obtainable from phrenicectomy.

4. The favourable impression that patients undergoing collapse therapy create on the minds of their fellow-patients, both in hospital and at dispensaries, is an indirect testimony to the value of the treatment and incidentally is important as affecting the morale of the other patients.

5. The results of collapse therapy suitably applied are often appreciably better in a given time than the results of treatment used to be without it, although the close supervision that is needed in connexion

with artificial pneumothorax must be given due weight in assessing the value of this special ancillary method of treatment.

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CUTANEOUS REACTIONS TO PRODUCTS OF THE HÆMOLYTIC STREPTOCOCCUS

IN SCARLET FEVER AND ERYSIPELAS

By J. P. McGibbon, M.D., M.R.C.P. Edin., D.P.H.

During recent years numerous writers have reported the occurrence both in health and in disease of cutaneous reactions to various streptococcal products. They believe that these reactions are due to the development of an allergic or hypersensitive state. Most of this work has been focused round the problem of rheumatic infection, and Coburn [1] in America and Collis [2] in this country have published results which, based on a study of these skin reactions, appear to demonstrate the close association between the condition which Coburn calls the "rheumatic state" and infection with a hæmolytic streptococcus.

It therefore has become of obvious interest to ascertain whether the skin reactions described by these workers would follow a known streptococcal infection such as scarlet fever, or whether, on the other hand, these reactions can be regarded as in any sense specific to rheumatic infection. The results obtained in skin-testing a small preliminary series of scarlet fever patients have already been described (Gibson and McGibbon [3]). This work has since been extended, an effort being made to eliminate any possible fallacies. The skin reactions in erysipelas contrast sharply with those in scarlet fever and deserve special attention.

Methods and Results

The extracts used for skin-testing have been prepared in the department of bacteriology in the University of Edinburgh. The method of preparation has been described previously. The material used is an extract obtained from the hæmolytic streptococcus, freed from diffusible exotoxin and from bacterial debris. The "endotoxin" so obtained is apparently identical for practical purposes with the active principle of the American "nucleoprotein" preparation. It will here be called "hæmolytic streptococcal extract," designated for short H.S.E. as suggested by Collis.[4] The crude extract was diluted 1/100 in saline prior to skin-testing, and 0·2 c.cm. of this diluted material was injected intracutaneously in the anterior aspect of the forearm. The results were read at the end of 24 hours.

Reactions to H.S.E.—Twenty-four hours after the injection of H.S.E. nothing may be seen but a small area of trauma at the site of injection. This frequently takes the form of a minute papule, which may be seen for some days. On the other hand, there may appear after some hours an area of redness, which increases in intensity to reach a maximum of perhaps 50 by 30 mm. at the end of 36 hours. In the very strong reactions this area increases still further till it may reach 80 or even 100 mm. in its greatest diameter. The fully formed reaction, when typically developed, is marked off into zones. There is a central dark red swollen area of perhaps 20 to 30 mm. in diameter, surrounded by a much paler erythema which may in turn either merge into the surrounding skin or possess a sharp outline. Less commonly, a zone of pallor may surround the erythema. The dark red area is œdematous, and in the centre there is often a paler spot or vesicle, which is almost necrotic in appearance. Tenderness is almost a constant feature, and occasionally there is slight pain on movement of the arm. Fading is rapid after 24 to 48 hours, depending on the degree of reaction, but traces of the inner papular lesion may remain for some days.

There can be no difficulty in the recognition of the negative reaction on the one hand and the moderately strong positive reaction on the other. In between these, however, there is every degree of reaction, and in the healthy adult a mild degree of erythema is almost the rule. Many of these reactions are of feeble character, and by the end of 24 hours are already fading. It is impossible to define the limits of the reaction with any accuracy, and their significance is open to doubt. It is probable that by employing a higher dilution of extract, many of these feeble reactions might be eliminated.

In reviewing the results a reaction has not been accepted as positive unless the erythema extended to 20 mm. in both diameters, except in a few cases where a slightly smaller reaction in a young child has been accompanied by the swelling, tenderness, and sharp delineation which one associates with a positive reaction. It is realised that the fixing of a 20 mm. minimum is purely arbitrary, but if one considers in each case the character of the reaction as well as its size, this division becomes, in actual practice, much less artificial than it would appear on paper. The positives have been subdivided into "one plus," "two plus," and "three plus" reactions, having a mean diameter of over 20 mm., 30 mm., and 40 mm. respectively.

SCARLET FEVER

A total of 74 cases were skin-tested with H.S.E. on admission and during convalescence, the first 28 cases being tested in each week of the disease. On admission no case showed a positive reaction and the feeble type of reaction described was uncommon. It was possible to divide the cases into two main groups on the behaviour of the skin reaction in the subsequent weeks. Table I. shows the number of cases developing allergic reaction in each age-group.

TABLE I

Age-group.	Cases in group.	Negatives.	Positives.			
			1-plus.	2-plus.	3-plus.	Total.
1–5	19	6	9	3	1	13
6–10	37	2	21	13	1	35
11–40	18	0	4	9	5	18
Totals ..	74	8	—	—	—	66

Positives.—This group numbered 66 cases—i.e., 89·2 per cent. of the total. All the cases over seven years of age became positive, and from a study of the 28 cases which were tested every week it was noted that the allergic reaction tended to appear earlier in the older age-groups.

Negatives.—Only 8 cases (10·8 per cent.) failed to develop definite positive reactions. The oldest of these patients was aged seven years. Five such cases showed a feeble reaction which remained unchanged. One child remained Dick-positive and relapsed in the fifth week.

Table II. shows the 74 cases of scarlet fever grouped according to the coincident changes in the Dick reaction.

TABLE II

Group.	H.S.E.		Dick test.		Cases.
	On admission.	On discharge.	On admission.	On discharge.	
1	–	+	+	–	53
2	–	+	–	–	11
3	–	+	+	+	2
Cases developing allergic reaction					66
4	–	–	+	–	7
5	–	–	–	–	0
6	–	–	+	+	1
Cases not developing allergic reaction					8

Sixty cases (Groups 1 and 4) showed the usual change in the Dick reaction from positive to negative, but 7 of them (Group 4) failed to develop a positive reaction to H.S.E. On the other hand, of the 3 cases which remained Dick-positive (Groups 3 and 6), 2 became sensitive to H.S.E. (Group 3).

It does not seem possible on the basis of these results to distinguish any close relationship between the two reactions. When, however, one studies the changes in the skin reaction from week to week, the impression is gained that where the Dick-positive state tends to persist till late in convalescence, the allergic reaction tends to be slow in appearing. On the other hand, when the typical change in the Dick reaction has occurred by the second week, the allergic reaction appears more rapidly. There may, however, be no specific relationship between the two reactions, the explanation resting rather in the ages of the subjects tested. In the younger children there is a less constant development of sensitiveness to H.S.E. There also appears to be a "lag" in the development of immunity as judged by the appearance of a Dick-negative state on weekly testing (unpublished observations).

Tests in persons not suffering from scarlet fever were also made: 160 persons were tested and numerous retests have been made. The following are the results in brief :—

Measles.—Thirty cases, aged 1 to 10 years. Twenty were convalescent cases in the third or fourth week of disease. All were negative, contrasting sharply with the convalescents in scarlet fever.

Diphtheria.—Twelve children, aged 3 to 16 years, were tested with H.S.E. at different stages of the disease. The three oldest children gave positive reactions. The others were all negative and remained so when retested. Antitoxin dosage, 6000 to 150,000 units.

Puerperal Infection.—Twenty-one cases were tested on admission. Seven were positive, 14 were negative. In 5 of 14 cases where it was possible to carry out repeated weekly tests there was a notable increase in the intensity of the reaction, but it was not possible to ascribe this with any certainty to the specific effect of infection with a hæmolytic streptococcus. All seriously ill patients gave negative or feeble reactions. The reaction to H.S.E. prior to infection was not known.

Medical Cases.—Thirty-four patients, aged 9 to 65 years. Negatives numbered 21. They included the gastric, respiratory, tuberculous, and cardiac (old rheumatic) cases tested. Positives numbered 13 (38 per cent.). They included cases of rheumatic infection (5), arthritis (2), asthma (2), nephritis (1), hæmaturia (1), and anæmia (1). A very strong reaction was noted in a case of erythema nodosum. (The great sensitivity of the skin in this condition to H.S.E. has already been described by Collis.[5])

Health.—Thirty-three healthy persons were tested. Fi were members of the medical staff of the Edinburgh Ci Hospital, and being exposed to hæmolytic streptococ every day can scarcely be regarded as normal person Two were very strong reactors, one moderately strong, an two negative. All had had scarlet fever. The other persons were medical students not in contact with scarl fever. Only six definitely positive reactions were obtaine It was not possible to relate the results to any previo infection or to the Dick reaction. Retests four wee later revealed no material change.

ERYSIPELAS

The skin reaction to H.S.E. in erysipelas, anoth streptococcal infection, is of considerable interest.

Negatives.—Of 30 patients tested, only thr negatives were obtained. The first negative patien was found subsequently not to be suffering fro erysipelas, and was removed to a surgical unit f treatment of a subacute mastoiditis. The secon negative result occurred in a case of erysipel complicating very severe burning. The patient w moribund when tested. The third negative reacti occurred in a child two years of age who was gravely i

Positives.—The reactions obtained were in man cases of considerable intensity, even in the presen of high fever. Retests did not reveal any materi change in the reaction. In erysipelas there do not seem to be the same differentiation into zone the reaction rather taking the form of a unifor pink or red erythema, with a slightly raised clear defined margin, showing some similarity to th erysipelatous lesion itself, but with only sligh tenderness, no actual pain, and no tendency to blo formation.

Discussion

In the previous paper it was submitted that th reaction which appeared in the later stages of scarl fever had arisen de novo and could not mark th reappearance of a pre-existing allergic state. I health such reactions seldom occur in young childre but their incidence increases up to about the age fourteen.[4 6] The cases tested were all of a mil type, whereas these skin reactions occur in th presence of sharp pyrexia and do not appear to b inhibited by systemic disturbance, unless this b severe. Mackenzie and Hanger[7] reported tha repetition of injections on the same area of skin ma produce some non-specific acceleration of the reactio In the later series of 46 cases only one retest ha therefore been made. An even higher proportio of positives has been obtained than previously whe the tests were made weekly. It did not seem likel that the repetition of injections could be producin any specific sensitisation of the patients tested, an subsequent work has shown that this possibility ca also be excluded. Numerous retests in patient suffering from a wide variety of diseases as well a on healthy persons have failed to reveal any materia change in the reaction.

The results obtained bear some analogy to thos obtained by Irvine-Jones[8] in rheumatic childre using a composite reagent containing both extracellular and intracellular material, and also to th experimental work of Dochez and Stevens.[9] The also show a striking resemblance to results obtaine ten years ago by Bristol,[10] using a dry preparatio of streptococcus protein by the percutaneous route.

It is difficult to assess the clinical significance o the development of this allergic state in the late stages of scarlet fever. It seems possible that it may be a factor in the onset of that most interesting complication, scarlatinal nephritis. Some experimental evidence has been produced by Lukens and Longcope,[11] which adds strength to this belief.

The incidence of nephritis in the Edinburgh City Hospital is very low, and the complication did not arise in the 74 cases tested. A few other cases have, however, been tested after the onset of the renal complication, but the reaction has not shown any undue severity or other feature of interest, suggesting that there must be some more important factor involved.

In scarlatinal arthritis the reaction appears to be constantly well developed and may be exceptionally severe. According to Gibson and Thomson[12] the incidence of positives in the acute febrile phase of rheumatic infection is relatively low. On the basis of these skin reactions scarlatinal arthritis and acute rheumatism therefore appear to be sharply differentiated. This finding suggests that the importance of the hæmolytic streptococcus in the latter condition has been over-estimated, and this is in accord with the general conclusion of Gibson and Thomson. As, however, their results are at variance with those obtained by Collis,[2, 4] there is obviously need for further investigation before any conclusions can be drawn.

The persistence of this allergic state also requires further study, especially if scarlet fever be accepted as an ætiological factor in the subsequent development of acute rheumatism. Three cases have been retested with H.S.E. 12 months after their scarlet fever. All are still positive, and one patient has developed chorea.

Apart from the problem of rheumatic infection, the demonstration of the development of this allergic reaction is of interest in that it lends support to the suggestion advanced by Ando[13] and also by Toyoda[14] that a positive Dick reaction may be due to an "endotoxic" factor in the Dick filtrate used. I can only say in this connexion, however, that after testing 150 scarlet fever patients week by week with the "Dick toxin" supplied by Messrs. Burroughs Wellcome and Co. the development of this type of reaction during the course of the disease has never been observed.

Summary and Conclusions

A condition of hypersensitiveness to products of the hæmolytic streptococcus has been described by various workers. It has been possible to demonstrate the development of this allergic state during the course of scarlet fever.

Using an extract representing the soluble intracellular products of the organism freed from all diffusible substances, about 90 per cent. of 74 cases, including all the cases over seven years of age, have shown a positive reaction by the fourth week. The relationship of this allergic state to scarlatinal nephritis and arthritis and its possible importance in the development of the rheumatic state have been briefly discussed.

A total of 160 persons not suffering from scarlet fever have also been skin-tested. In all cases age has an important influence on the results. Retests both in health and in a wide variety of diseases have produced no material change in the reaction. The latter appears to be inhibited in chronic cardiac disease and wasting conditions, but not in acute infections, unless these be of great severity.

The results in erysipelas contrast sharply with those in scarlet fever. In erysipelas the reaction to H.S.E. is positive in the first week and appears to remain so throughout the disease. In the absence of extreme illness a negative reaction in an adult patient should, therefore, question the diagnosis of erysipelas.

Conclusions at this stage must necessarily be limited. It will not be possible to assess the importance of the results already obtained until the mechanism of these skin reactions is better understood and until their significance, in relation to the vital processes in general, is better appreciated.

Most of these observations have been made at the Edinburgh City Hospital and I again wish to express my thanks to Dr. W. T. Benson. I am also indebted to Dr. Chalmers Watson for giving me access to his wards at the Edinburgh Royal Infirmary.

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OBSERVATIONS ON THE TREATMENT OF
CLIMATIC BUBO AND ALLIED DISEASES

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Climatic bubo and allied diseases are a cause of much invalidism in the tropics and subtropics. Much valuable work has been published recently both in this country and abroad which has greatly advanced our knowledge of the pathology of climatic bubo and clarified the diagnosis of this disease; but in the last few years little has been written about the treatment, despite the fact that this has hitherto been far from satisfactory. Any therapeutic measure which raises a hope of reducing the inevitable period of disability of these buboes should be more than welcome.

In this paper are recorded observations on the treatment of 81 cases of inguinal adenitis, occurring in China and the West Indies, closely similar in their symptoms and course. No serious effort has been made to classify the cases, which are grouped under the elastic definition of "climatic bubo and allied diseases." In practice they divided themselves into two main classes: (1) climatic bubo, and (2) venereal bubo, the latter term including buboes in patients who were suffering from gonorrhœa or soft sore (ulcus molle). As yet there is a strict line drawn between the so-called climatic bubo and the venereal bubo, despite the fact that most authorities now place climatic bubo among the venereal diseases. Hanschell,[1] who made an intensive study of the condition, stated that the diagnosis depended upon four criteria: (*a*) inguinal adenitis and peri-adenitis; (*b*) absence of known more or less common lesions about the genital and anal area; (*c*) fever; and (*d*) a history indicating that the condition has developed after coitus in the tropics or subtropics. From this it appears that the presence of a definite venereal lesion precludes the diagnosis of climatic bubo; yet it seems reasonable to assume that climatic bubo may coexist with another venereal disease. In other words, many cases, perforce diagnosed as venereal buboes, may be in reality climatic buboes superimposed on a venereal lesion. It is in connexion with such a combination of diseases that Frei's intradermal reaction [2, 3] becomes so valuable. This specific reaction is carried out in a similar manner to the Mantoux test for tuberculosis; the antigen or injected material is obtained by gland puncture from an unequivocal climatic bubo, and a positive reaction is indicated by a localised cutaneous reaction around the site of injection, having a maximal development within 48 hours. Frei's reaction was therefore performed on some of the later patients of this series, but the antigen became contaminated and the preparation of a new one was not considered consistent with the final principles of treatment, which did not admit of aspiration of buboes.

The cases recorded below represent our joint experience of treating climatic bubo and allied diseases from 1926 until June, 1933. Throughout the series certain recognised methods of treatment for inguinal adenitis were tried and the results noted. From such observations an attempt was made to evolve a reasonably satisfactory method, and it is claimed that this attempt has met with some success.

EVOLUTION OF THE TREATMENT

The methods of treatment under trial may be mentioned under three rough headings:—

(1) *Purely local treatment* by the excision of the affected inguinal glands.

(2) *Protein shock therapy*, with or without local treatment by aspiration or incision of affected glands. The method was recommended by Hanschell,[1, 4] and consisted of one to three intravenous injections of T.A.B. vaccine in doses of 50 to 200 millions, with an interval of four or five days between the injections.

(3) *Intravenous injection of tartar emetic.*—Antimony has not infrequently been used abroad in the treatment of climatic bubo. Günther [5] and De Bellard [6] recommended intravenous stibenyl, and Destephano and Vaccarezza [7] have successfully treated a large series of cases with intravenous tartar emetic. It is by a modification of the technique of the last-mentioned investigators that the best results have been obtained in the present series (Table I.).

TABLE I.—*Results of Treatment in all Cases*

Cases.	Year.	Method of treatment.	Average disability period in days.
2	1926	*Method 1.*—Excision of affected inguinal glands.	90
43	1927 1928 1929 1931	*Method 2.*—Protein shock therapy, by intravenous T.A.B. vaccine. (In 16 cases also intravenous N.A.B.)	46·6
36	1931 1932 1933	*Method 3.*—Intravenous tartar emetic.	28·8

81 = Total number of patients.

The patients treated by the first and second methods of treatment summarised in this table were all clinically diagnosed as suffering from climatic bubo, and details of these cases have been already published.[8] Hanschell [1] has claimed that protein-shock treatment in his hands converted a long and incapacitating illness into a comparatively short one lasting one to three weeks, but in the main this was not confirmed by our series as is demonstrated by the average disability period (46·6 days).

It was the original intention to treat by tartar emetic injections climatic bubo patients alone; but latterly, as the results appeared so favourable in climatic bubo, it was decided to widen the scope and include patients who had buboes, and were also suffering from gonorrhœa or *ulcus molle*. In the case of these latter diseases tartar emetic injections were used as an adjuvant only and did not replace the customary local or general treatment. It should be noted, however, that obvious syphilitic patients proved by the Wassermann or Kahn tests have not been included in this series.

TREATMENT BY INTRAVENOUS TARTAR EMETIC

By June, 1932, observations had compelled the conclusion that intravenous tartar emetic was the most satisfactory method of treatment yet employed, and one which merited more intensive trial. Accordingly all other methods were abandoned. Further study of the tartar emetic treatment and its effects led to the adoption of a modification of the original procedure with a definite improvement in the results.

(1) *The original method.*—The injections are given every three or four days, the dose of the drug in the first injection being gr. ½, in the second gr. 1, and in the third grs. 1½. The latter is the maximal dose. The duration of the treatment is of course regulated by the results. The patient is prepared before each injection by the achievement of free bowel movement and by the administration of glucose on the night previous to, and also on the morning of, the injection. The glucose acts as a guard against tissue injury, especially hepatic.

It is essential that the tartar emetic solution should be made up fresh on each day of injection. The exact amount of drug to be used is weighed out and placed in a sterile glass beaker. The solvent for making the solution is sterile distilled water, and the volume of solution for each injection is 10 c.cm. The injection is given very slowly in an attempt to avoid any reaction, which takes the form of a dull aching at the elbow and shoulder of the arm in which the injection is being given, and often after the injection is finished laryngeal irritation with violent coughing. Nausea and vomiting also may rarely be caused. In order to reduce the chance of a reaction to a minimum the injection should take *at least five minutes*.

(2) *The modification* differs from the original method in the time employed in giving the injection. It appears that to get the best results it is desirable to produce in the patient a well-marked though transient reaction. The symptoms produced do not seem to be of serious pathological significance. The modification then consists in giving the drug rapidly enough to ensure the production of a reaction. The progress of cases, in which a reaction was produced with every injection, was consistently more satisfactory than that of cases in which the temporary comfort of the patient was considered, and the injections slowed down to obviate any reaction. The average time of injection required to produce a reaction is *three minutes*.

EFFECT OF LOCAL SURGICAL TREATMENT

When the trial of treatment with intravenous tartar emetic was begun it was customary to back it up with local surgical measures, if they were considered necessary. Softening and breaking-down of a bubo was usually treated by incision with evacuation of the pus or by single or repeated aspiration. The occurrence of secondary bacterial invasion resulting from these methods was so obviously a disadvantage that eventually incision and aspiration were abandoned. It came to be considered essential to avoid if possible any break in the skin over the bubo, even in the presence of fluctuation.

In most cases treated with tartar emetic absorption of the pus and resolution of the inflammatory reaction in the bubo occurred gradually but surely. If by a mischance the bubo leaked or underwent a spontaneous rupture the opening was well cleansed with spirit and closed by a collodion dressing. This principle of non-interference with the bubo seems to be an important point in the tartar emetic treatment.

TABLE II.—*Results of Treatment with Intravenous Tartar Emetic*

ORIGINAL METHOD

Case.	Age.	Year in which treatment commenced.	Condition.*	Injections.	Total dosage (grains).	Remarks.	Disability period (days).
1	33	1930	C.B. (L.)	10	12½	Asp. once †	26
2	31	,,	C.B. (R. & L.)	12	15	Repeated asp.†	60
3	25	,,	C.B. (L.)	11	15	Asp. once.†	40
4	23	1931	C.B. (R. & L.)	12	15	Repeated asp.†	52
5	23	,,	C.B. (R.)	12	16	Asp. and later incision.†	43
6	34	,,	,,	12	16	Incision.†	44
7	37	,,	,,	7	9	No aspiration.	25
8	25	,,	,,	7	9	Incision.†	25
9	41	,,	,,	16	19½	Incision twice.†	56
10	34	,,	,,	8	10½	Incision.†	37
11	38	1932	,,	7	9	No aspiration.	23
12	39	,,	,,	4	4½	,,	16
13	27	,,	,,	8	10½	,,	25
14	22	,,	,,	7	9	Aspiration.†	24
15	28	,,	C.B. (L.)	7	9	,, †	24
16	37	,,	,,	4	4½	No aspiration.	18
			MODIFICATION OF ORIGINAL METHOD				
17	29	1932	C.B. (L.)	8	10½	Aspiration.†	35
18	27	,,	V.B. (R. & L.) G.	8	10½	No aspiration.	21
19	25	,,	,,	10	13½	,,	34
20	30	,,	V.B. (L.) G.	4	4½	,,	12
21	24	,,	V.B. (R.) G.	8	10½	,,	26
22	26	,,	C.B. (R.)	10	13½	,,	36
23	22	1933	V.B. (R.) U.M.	7	9	,,	23
24	24	,,	,,	10	13½	Spontaneous rupture healing slow.	62
25	28	,,	C.B. (R. & L.)	4	4½	No aspiration.	16
26	23	,,	,,	6	7½	,,	20
27	24	,,	C.B. (L.)	9	12	,,	31
28	27	,,	V.B. (R. & L.) U.M.	6	7½	,,	21
29	29	,,	V.B. (L.) U.M.	9	12	,,	31
30	22	,,	C.B. (L.)	7	9	,,	23
31	23	,,	V.B. (R. & L.) U.M.	4	4½	,,	14
32	25	,,	V.B. (L.) U.M.	6	7½	,,	21
33	20	,,	,,	6	7½	,,	19
34	32	,,	C.B. (L.)	4	4½	,,	14
35	33	,,	V.B. (R. & L.) U.M.	6	7½	,,	22
36	25	,,	C.B. (R.)	6	7½	,,	20

* C.B. = climatic bubo; V.B. = venereal bubo; (R.) = right; (L.) = left; G. = gonorrhœa; U.M. = ulcus molle. † Cases tampered with surgically. Asp. = aspiration.

The results set out in Table II. may be summarised as follows :—

A.D. = Average disability period in days.

		A.D.
All cases treated by tartar emetic .. .. =	36	28·8
Cases treated by the original method (all climatic bubo) .. .. =	16	34·2
All cases treated by the modification (mixed diseases) .. .. =	20	24·6
Climatic bubo cases treated by the modification .. .. =	8	23·3

Two more points are brought out by the figures; in the case of 12 patients in which aspiration or incision were performed the disability period was 38·9 days, whereas in the 24 patients in which no surgical interference of any description took place the disability period was only 23·9 days. It will thus be seen that the introduction of tartar emetic treatment in the earlier cases of the series reduced the disability period of climatic bubo from an average of 46·6 days per patient, treated by protein shock, to 34·2 days; and approximately yet another 10 days per patient has been saved by the modification which was introduced in October, 1932, and also the treatment has been successfully extended to patients suffering from venereal buboes.

Statistics are always somewhat dangerous, and it is possible by excluding all cases tampered with surgically in the whole tartar emetic series to demonstrate a slight but definite advantage, in rapidity of recovery, in the untampered cases of the earlier period, when the original method of administration was in use. However, with a little consideration it will be evident that these earlier untampered buboes represent only the mild infections of the earlier period, whereas the untampered cases treated by the modified method (19 out of 20 patients) include buboes of all grades of severity.

It should be noted also with regard to the second series of cases that though the majority of these buboes broke down sufficiently to allow definite fluctuation to be obtained, and in many cases the skin over the swellings became red and adherent to the glands in all except one (Case 24), satisfactory and rapid resolution of the buboes occurred without open suppuration, improvement being already noticeable within two or three days of the commencement of treatment.

As regards the *total amount of tartar emetic used*, in the original method the number of injections ranged from 4 to 16 per patient and the total quantity of tartar emetic given from grs. 4½ to 19½ (average 11½). Since the modified treatment has been in use, though the number of injections has not been less than four, it has never exceeded ten, and the total quantity of the drug administered has varied between grs. 4½ and 13½ (average rather less than grs. 9).

The above compares favourably with the results published by Destephano and Vaccarezza,[7] who in 73 cases required more tartar emetic per patient. Their minimal doses were grs. 5 to 11, given in four to eight injections; this was sufficient to cure rather less than two-thirds of their patients, the remainder requiring grs. 14 to 47 given in 10 to 32 injections.

COMMENTS AND CONCLUSIONS

These observations indicate that intravenous tartar emetic is the most effective method of treating the chronic inguinal adenitis of climatic bubo and allied diseases which we have so far employed. Further, it appears that the best results are to be obtained by modifications of the original technique.

It is claimed that the disability period can be reduced to its minimum if two points are borne in mind throughout the treatment. They are: (1) administration of tartar emetic with sufficient rapidity to cause a definite reaction; (2) resolute avoidance, so far as is practicable, of all local surgical treatment in order to avoid secondary bacterial invasion of the inguinal glands.

We are indebted to the Medical Director-General of the Navy for permission to publish these notes.

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CLINICAL AND LABORATORY NOTES

CHLOROMA

REPORT OF A CASE IN A CHILD WITH POST-MORTEM FINDINGS

By Hugh T. Ashby, M.D. Camb., F.R.C.P. Lond.
HON. PHYSICIAN TO THE SALFORD ROYAL HOSPITAL AND THE ROYAL MANCHESTER CHILDREN'S HOSPITAL; VISITING PHYSICIAN FOR CHILDREN, MANCHESTER CITY HOSPITALS: AND

G. Stewart Smith, M.D. Manch.
ASSISTANT PATHOLOGIST, MANCHESTER CITY HOSPITALS

The exact relationship between chloroma and the leukæmias is still not fully understood, but the view is held generally that the blood changes in chloroma consist in an overflow of the tumour cells into the blood, and that such tumour cells may be either of myeloid or lymphatic origin.

The characteristic feature of the disease is a firm tumour growth, generally in the orbits, starting first on one side and then quickly involving the opposite side. The eyes become prominent and the conjunctivæ take on a greenish colour. The tumour grows quickly, and metastases occur throughout the body with great rapidity and cause death within a few weeks of the onset of symptoms. Examination of the blood shows the presence of primitive cells which may apparently be either myeloblasts or lymphoblasts, though most of the cases which have been fully investigated have been thought to be myelogenous in origin. The number of such cells in the blood is extremely variable, but the leucocytosis is seldom as marked as in the leukæmias.

Three previous cases were reported by us in The Lancet in 1923 and 1928, when a wider survey of the condition was given; this report is supplementary to our previous communications. It is curious to note that the four patients were males and had many features in common.

The case here reported is that of a boy aged 9 years, admitted to the Booth Hall Hospital for Children on March 22nd, 1933. He had not been in good health for about two months, but prior to this he had always been healthy. On admission he was fairly well nourished, the only symptom complained of being pain in the back. Four days after admission the left eye was found to be slightly prominent, and the conjunctiva became a pale greenish colour. The right eye started in a similar way two days later. Dr. T. M. Bride, ophthalmic surgeon, reported that "the movements of both eyes are good, but there is much proptosis, conjunctivitis, and ulceration. The discs are normal." The boy complained of much headache and lost weight rapidly. Firm tumour growths filled the orbits and the temporal fossæ to an increasing extent, until death took place five weeks after admission to hospital. Examination of the blood gave the following results:—

	April 7th.	April 19th.
Red blood-cells	2,604,000 per c.mm.	1,612,000 per c.mm.
Hb.	58 %	35 %
Colour-index	1·1	1·1
Leucocytes	22,000 per c.mm.	14,000 per c.mm.
Polymorphonuclears	15 %	19 %
Lymphocytes	13 %	27 %
Large mononuclears	Nil	2 %
Eosinophils	"	Nil
Mast cells	"	"
Myelocytes	1 %	2 %
Myeloblasts	71 %	47 %
Premyelocytes	Nil	3 %

The red cells show slight anisocytosis, but no definite poikilocytosis. At the first examination one normoblast and one megaloblast were seen per each 100 leucocytes, but at the second there were 5·5 normoblasts and one megaloblast. Blood-platelets were scanty at each examination.

The oxidase reaction (Shaw Dunn's method) on the cells classified as myeloblasts was negative, but the cells were possibly too primitive to give a positive result. In films stained with Leishman's stain the myeloblasts were roughly equal in size to the polymorphonuclears and had a large, round, deeply staining nucleus often showing two, three, or four nucleoli. The cytoplasm formed a rim around the nucleus and was basophilic and non-granular.

The urine was tested for Bence-Jones proteosuria with a negative result.

POST-MORTEM EXAMINATION

The body was thin and emaciated with bilateral proptosis and definite sloughing of each cornea; the surface of the body showed many small subcutaneous tumours.

Lymphatic glands.—The bronchial, cervical, dorsal, lumbar, axillary, and inguinal glands were enlarged, firm, and on section showed the typical chloromatous grass-green coloration.

Bones and joints.—There were small greenish tumours at the costochondral junctions on each side, and there was a large green tumour on the deep aspect of the upper half of the sternum. The rib-marrow was red; that of the tibia brownish, with a greenish tinge in places.

Heart.—Subpericardial petechial hæmorrhages were present. The heart was small and pale, and near the auriculo-ventricular groove was a firm greenish tumour mass.

Lungs.—There were tumour deposits on each parietal pleura, but not under the visceral pleura. The lungs showed no abnormality.

The *liver* was pale in colour and firmer than normal. A greenish colour was visible in the portal areas, but no discrete tumour masses were found.

The *spleen* was enlarged, weighing 110 g., of normal shape and consistency.

Kidneys.—Right: general slight greenish coloration. Left: one small cortical growth and general slight green colour.

Skull.—Removal of the roofs of the orbits revealed thick masses of greenish elastic tissue extending across the orbits. These masses did not invade the eyeball, but extended backwards along the optic nerves and were continuous with tumour growth in the pituitary fossa. There was no erosion of bone. Many small growths were present on the outer surface of the skull, one of which had ulcerated through the scalp. The brain showed no macroscopic abnormality.

Histology.—The tissues from the orbital masses and from the other tumour deposits showed similar histological appearances, consisting of loosely packed tumour cells in a delicate reticulum. The cells were small, round or angular, with medium-sized, deeply staining nuclei showing no definite chromatin differentiation. The cytoplasm was definitely acidophilic. There were a few larger cells with faintly staining nuclei, probably of reticular origin. No giant cells were seen; the vascularity was poor. A section from the tumour mass in the auriculo-ventricular groove showed typical tumour growth infiltrating the cardiac muscle. The lymph glands and the spleen both showed a definite infiltration of tumour cells, but there was no evidence of hyperactivity of the lymph follicles. The liver and kidneys showed small collections of tumour cells, but no massive infiltration.

The oxidase reaction was negative in frozen sections of the various tumour masses, but in spite of this the character of the cells and the obvious lack of any sign of hyperactivity on the part of the lymphoid tissue, taken in conjunction with the blood picture, shows that the case was probably one of chloroma of myelogenous origin.

Chloroma is a rare disease in children, and this case is noteworthy for the number and size of the tumour growths.

We wish to thank Dr. John D'Ewart, medical superintendent of Booth Hall Hospital, for permission to publish this case.

RAPID BONE REGENERATION FOLLOWING DIAPHYSECTOMY OF THE CLAVICLE

By A. L. d'Abreu, M.B. Birm., F.R.C.S. Eng.
ASSISTANT IN THE SURGICAL UNIT, THE WELSH NATIONAL SCHOOL OF MEDICINE, ROYAL INFIRMARY, CARDIFF

The report in The Lancet of Dec. 2nd, 1933, on the annual general meeting of the British Orthopædic Association held in Edinburgh on Nov. 24th and 25th contains the following paragraph :—

> Mr. D. M. Greig (Edinburgh), speaking on acute osteomyelitis and repair of fractures, said that bone was at the mercy of its blood-supply and was decalcified by the hyperæmia of infection, injury, neoplasm, and disuse. In acute osteomyelitis the liberated calcium was redeposited within the periosteum to form the new involucrum. The operation of diaphysectomy removed the available calcium and accounted for failure of bone regeneration ; it should never be performed until the new bone was well developed.

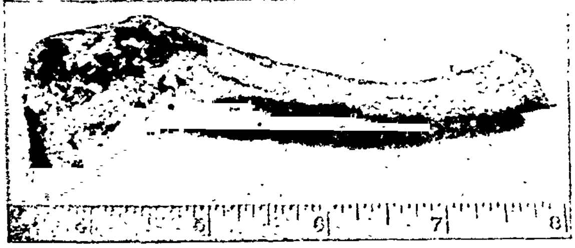


FIG. 1.—Bone removed at operation.

It is difficult to reconcile the last sentence with clinical experience based upon observations in cases in which diaphysectomy has been carried out as an immediate procedure in acute osteomyelitis of the fibula, clavicle, ulna, metatarsals, and the femur, and in all of which abundant regeneration of bone occurred rapidly. I had the opportunity of seeing a case at St. Bartholomew's Hospital in which Mr. Geoffrey Keynes demonstrated a well-regenerated femur following an extensive diaphysectomy for acute osteomyelitis.

The following case is noteworthy for the extreme rapidity of bone redeposition.

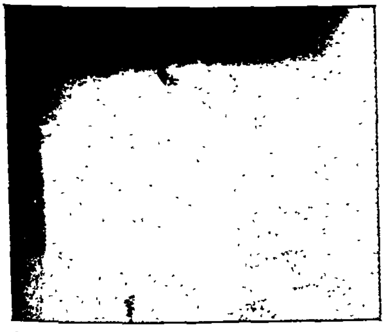


FIG. 2.—Radiogram taken 22 days after operation.

I was asked to see in consultation with Dr. Ivor Davies and Dr. W. Phillips, of the medical unit of the Welsh National School of Medicine, Cardiff Royal Infirmary, a boy of 14 suffering from extreme pain in the region of the right acromio-clavicular joint and with a temperature of 102.° He was known to be suffering from a severe staphylococcal infection of the accessory nasal sinuses. We agreed upon a diagnosis of osteomyelitis of the clavicle. I operated and opened the outer end of the clavicle and evacuated pus which contained staphylococci. The temperature fell, but three days later the length of the clavicle was exquisitely tender. I operated again, found pus under the periosteum and proceeded to complete diaphysectomy of the clavicle. (Fig. 1 shows the removed bone.)

Progress was satisfactory and the wound rapidly healed. Ten days after operation a large mass of callus was palpable. The patient, who until then had been immobilised with a long sand pillow between the the scapulæ, was now allowed to use the arm freely. Fig. 2 reproduces a radiogram taken 22 days after the diaphysectomy had been performed and shows a massive bone deposition. Fig. 3 shows the restoration of function in the limb ; this photograph was taken 34 days after the clavicle had been removed. At this time palpation revealed a normally outlined clavicle.

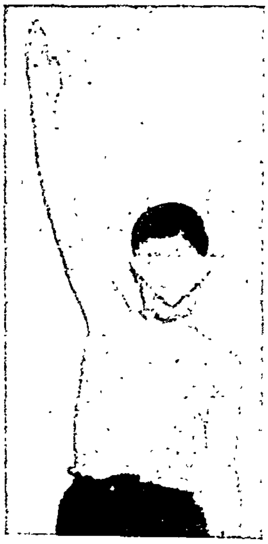


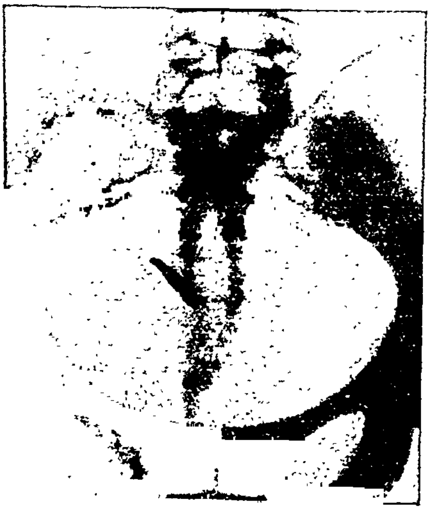
FIG. 3.—Photograph showing restoration of function (34 days after operation).

The case is an example, amongst many, of the rapidity with which new bone is refashioned after the subperiosteal removal of the shaft in acute osteomyelitis, especially in young subjects.

I am grateful to Prof. A. W. Sheen, director of the surgical unit, for permission to publish these notes and to Dr. Owen L. Rhys for the radiograms. Also to Mr. R. Hogan, of the surgical unit laboratory, for the photograph.

MIGRATION OF A GRÄFENBERG RING

By Margaret C. Murphy, M.B. Calcutta, M.R.C.S. Eng., W.M.S.
MEDICAL SUPERINTENDENT, LADY READING HOSPITAL, SIMLA, INDIA



Radiogram of pelvis, showing the ring.

A Japanese lady consulted me in June, being very distressed because her monthly period was overdue. Her husband wrote saying she had had two difficult labours with living children, six and eight years previously and had been advised to avoid pregnancy in future. She had had an induced abortion three years ago, and after trying various "poisonous remedies" as contraceptives had had a Gräfenberg ring inserted by a civil surgeon about 15 months before she came to see me. This ring was changed a year later by another doctor, and she suffered from "functional disorders." It was therefore removed and a third ring was inserted by yet another doctor on March 19th, 1933. The patient declared that this ring was put "very high up" with instruments, and that after its insertion she had pain in the lower part of the back, chiefly on the right side, and difficulty in walking for about a week. Her last period had occurred on May 10th and lasted for three or four days. She complained of feeling sick and of difficulty in defæcation and micturition. When she was examined on June 21st her uterus was bulky and deflected slightly to the left, and an X ray examination showed the ring high on the right side and obviously outside the uterus (see Figure).

She was admitted into hospital on June 28th and operated on on the 30th. On opening the abdomen a part of the ring was visible shining through the peritoneum of the right broad ligament, a little below the round ligament and about half an inch to the right of the uterus. The peritoneum was incised, and the ring, which was embedded in the broad ligament, was divided and drawn out. The peritoneum was sutured, the patient sterilised, and a small ventral hernia repaired.

The uterus was definitely enlarged and pregnant Recovery was uneventful and the pregnancy i continuing.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF OBSTETRICS AND GYNÆCOLOGY

At a meeting of this section held on Dec. 7th the chair was taken by Prof. W. **Blair Bell**, the president, and Prof. S. **Aschheim** read a paper on the presence and effects of

Female Sex Hormones and Gonadotropic Substances

The ovary, he said, produced several hormones, two of which were known: the œstrogenic hormone formed in ripe and ripening Graafian follicles, and the luteal hormone. The former was responsible for œstrus, and had been obtained some 20 years ago from ovaries and placentæ. There were five chief tests for its recognition. The uterine growth test was of great practical significance. The uterus of castrated animals, under the influence of this hormone given per os or subcutaneously, showed marked proliferation and hyperæmia. The vaginal œstrus (Allen) test was based on the fact that the hormone produced œstral changes in the vagina: desquamation of the horny cells into the lumen. A similar change was produced by vitamin-A deficiency. The mammary growth test was evidence of breast proliferation in castrated animals, even males. The chrome-cell and ganglion-cell regeneration test was also performed on castrates. Castration reduced the number of chromatophil cells in the ganglion cervicale uteri of the adult mouse from 3·5 to 1 per cent. Œstrus hormone raised it again to 8 per cent., a figure corresponding with that of pregnancy. After castration the ganglion cells degenerated, and this also was remedied by the hormone. The regeneration test was founded on the disappearance, under this hormone, of the castration cells in the anterior pituitary.

The physician would wish to know the application of these tests to his patients. The first test showed that the hormone was of value for atrophic uteri. Even in the early days clinical reports of the success of the œstrus-producing hormone in infantilism had not been wanting, although only of recent years had the hormone been available in quantity. Those who had insisted on large dosage were quite right, but in climacteric disturbances quite small amounts per os were sufficient. The changes in the vagina had no exact parallel in woman and the vaginal effects were of no importance at present.

The hormone could be demonstrated in ripening Graafian follicles and in the corpus luteum, and thence went into the blood. Its excretion in the urine ran parallel with its presence in the blood. In pregnanc the blood content rose, and excretion could b demonstrated from the eighth week onwards. Thi discovery was of great importance for therapeuti purposes. Probably the placenta was the chie producer during pregnancy; it contained some 150 to 2000 mouse-units at term. Its activity probabl accounted partly for the growth of the uterus and th laying down of the new blood-vessels, though othe factors might play a part also, since in extra-uterir gestation the uterus grew until it reached the thre months' size, but no more, although the hormone w produced as freely as in normal pregnancy. Probab the presence of a placenta stimulated uterine growt Whether the hormone played a part in the fœt economy was yet unknown; the uterus of the nev born child was larger than that of the one year o child, and the mammæ swelled after birth. Admini tration of the hormone to premature infants seeme to help their growth.

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THE HORMONES OF THE CORPUS LU

The luteal hormone produced t development of the uterus w phase had been reached. This secretory phase was necessary for the nidation and early development of the fertilised ovum. In the premenstrual and pregnant uterine mucosa were found glycogen and a vitamin-containing lipoid. The hormone prevented the ripening of fresh follicles and suspended the sensitivity of the uterus to oxytoxin.

The gonadotropic hormone of the anterior lobe of the pituitary had been hypothecated in 1905 by Heape. Removal of the pituitary was followed by atrophy of the gonad. Five days after injection of the gonadotropic substance the ovary showed large and hæm[illegible] [illegible]les and the uterus was swollen; [illegible] produced by the urine of pregnant [illegible] vere three test reactions: the [illegible] follicles, sometimes accompanied [illegible] he appearance of normal corpora [illegible] ion of blood follicles and islets of [illegible] e: and the formation of corpora [illegible] a (atretic corpora lutea). The first [illegible] al reaction: the other two were [illegible] casionally only one change was [illegible] f implanting a fragment of anterior [illegible] ne formation of interstitial glands [illegible] ch of theca cells. The anterior pituitary [illegible] ptive power of sexual function in the female. [illegible] y partially in the male. That it controlled [illegible] male was shown by the fact that sexual function [illegible] ased after its removal, but after castration the hormone production in the pituitary continued and even increased. The placenta, decidua, pregnant corpus luteum, and blood-serum gave all three test reactions, but the hormone rapidly disappeared from the blood after delivery. The question of what happened to them had led the lecturer to discovering them in the urine, and to the test reaction for the diagnosis of pregnancy. In more than 13,000 cases now on record the original technique had shown an accuracy of 98·25 per cent. The hormones had been found in the urine of pregnant monkeys and mares. The gonadotropic substances were found in man in the amniotic fluid and the blood of newly born children, being excreted during the first few days of life. Their function was unknown; they might assure the continued function of the corpus luteum. Chorion epithelioma and hydatidiform mole could be diagnosed with considerable certainty by means of this test.

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THE FOLLICLE-RIPENING FACTOR

The first test reaction—i.e., the formation of large follicles—was obtained from injection of urine from patients with endocrine disorders like Graves's disease and myxœdema, climacteric and castrated patients, and women with cancer. The first reaction was therefore useless for the diagnosis of pregnancy. The distinction had suggested that the first reaction might be produced by a different substance altogether from that producing the other two. Experiment had shown that it was possible to obtain these two apart from the first, and vice versa. He had therefore called the two factors the follicle-ripening and the luteinising factor respectively. He had then experimented on the bursting of the follicle in the infantile mouse. In most animals the follicle burst spontaneously during heat, but in the rabbit and ferret it burst 12–18 hours after coitus, and bursting could be prevented if the pituitary were destroyed an hour (but no more) after coitus. Anterior pituitary extract produced bursting of the follicle. The process in the sexually mature ovary was as follows: at puberty the follicle-ripening hormone produced maturation of the follicle, and after this typical œstrous changes occurred in uterus and vagina. Then for some reason unknown the luteinising factor became operative, the follicle ruptured and a corpus luteum was formed. The rupture was not mechanical but hormonal. The follicle could be made to rupture in infantile animals by injecting the two factors one after the other—e.g., first the urine of castrates, and then ammoniacal extract of anterior pituitary. The hypophysis of infantile animals contained active gonadotropic substances before puberty, but these had no effect on the ovary beyond causing some enlargement of the granulosa cells, because the substances did not work until the ovary had been sensitised by the follicle-ripening hormone. Administration of the two factors in the right order would, Prof. Aschheim was convinced, give good therapeutic results in cases of amenorrhœa due to ovarian insufficiency resulting from a functional disturbance of the hypophysis. A mixture of the two factors could produce only fortuitous results.

Certain changes in the ovaries of pregnant women could only be explained as the result of abundant quantities of these gonadotropic substances—for example, overgrowth of the theca in atretic follicles. If the body were flooded with the hormones, as in hydatidiform mole, large lutein cysts were formed. Anterior pituitary hormone should be cautiously used, because the women to be treated had not usually many follicles in their ovaries, and those they had needed to be preserved. In the field of hormone research individual glands had to be selected out of the "incretorium" for study, and then replaced so that they might once more collaborate in the "consensus partium" of the endocrine system. The function of endocrine glands depended closely on vitamins, and coöperation of all branches of research was needed for the solution of the problem.

DISCUSSION

Prof. E. C. **Dodds** emphasised the importance of the work of Prof. Aschheim and Prof. Zondek in the study of these hormones. He described an investigation on an ovariectomised pregnant woman who went to term. Both œstrin and prolan were excreted in approximately normal amounts, so that the ovary could not be their source. Many compounds excreted by pregnant animals could produce œstrus, but they differed markedly in their chemical properties. The œstrus lock could be opened by a skeleton key very little related to œstrin. Therefore caution was necessary in the study of œstrogenic substances, as, for instance, those in coal and anthracene. He was not convinced of the existence of two prolans, and thought the histological evidence a dangerous ground for argument; he would like to see the follicle-producing and luteinising substances in two separate and distinct bottles.

Mr. A. S. **Parkes**, D.Sc., asked Prof. Aschheim to elaborate his views on the source of œstrin in the non-pregnant animal (the substance was produced in animals deprived of Graafian follicles) and on the possible identity of the substances in pregnant urine, in the anterior pituitary, and in the placenta. The three seemed likely to be closely related chemically, if not identical.

The **President** pointed out that Prof. Aschheim was a busy practising gynæcologist, and his work settled the question whether clinicians were fitted to do research work. He, also, would like to know the grounds for believing in the existence of two prolans. The effects of castration supported the belief in two, but the corpus luteum and the granulosa cells were antagonistic. The ripening of the follicle, followed by the formation of the corpus luteum, needed much explaining if the two were not parts of one abortion three years ago, and after trying various "poisonous remedies" as contraceptives had had a Gräfenberg ring inserted by a civil surgeon about 15 months before she came to see me. This ring was changed a year later by another doctor, and she suffered from "functional disorders." It was therefore removed and a third ring was inserted by yet another doctor on March 19th, 1933. The patient declared that this ring was put "very high up" with instruments, and that after its insertion she had pain in the lower part of the back, chiefly on the right side, and difficulty in walking for about a week. Her last period had occurred on May 10th and lasted for three or four days. She complained of feeling sick and of difficulty in defæcation and micturition. When she was examined on June 21st her uterus was bulky and deflected slightly to the left, and an X ray examination showed the ring high on the right side and obviously outside the uterus (see Figure).

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THE HORMONES OF THE CORPUS LUTEUM AND PITUITARY

The luteal hormone produced the secretory phase of development of the uterus when the proliferating phase had been reached. This secretory phase was necessary for the nidation and early development of the fertilised ovum. In the premenstrual and pregnant uterine mucosa were found glycogen and a vitamin-containing lipoid. The hormone prevented the ripening of fresh follicles and suspended the sensitivity of the uterus to oxytoxin.

The gonadotropic hormone of the anterior lobe of the pituitary had been hypothecated in 1905 by Heape. Removal of the pituitary was followed by atrophy of the gonad. Five days after injection of the gonadotropic substance the ovary showed large and hæm- …les and the uterus was swollen;

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produced by the urine of pregnant
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follicles, sometimes accompanied
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y partially in the male. That it controlled
male was shown by the fact that sexual function
ased after its removal, but after castration the hormone production in the pituitary continued and even increased. The placenta, decidua, pregnant corpus luteum, and blood-serum gave all three test reactions, but the hormone rapidly disappeared from the blood after delivery. The question of what happened to them had led the lecturer to discovering them in the urine, and to the test reaction for the diagnosis of pregnancy. In more than 13,000 cases now on record the original technique had shown an accuracy of 98·25 per cent. The hormones had been found in the urine of pregnant monkeys and mares. The gonadotropic substances were found in man in the amniotic fluid and the blood of newly born children, being excreted during the first few days of life. Their function was unknown; they might assure the continued function of the corpus luteum. Chorion epithelioma and hydatidiform mole could be diagnosed with considerable certainty by means of this test.

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THE FOLLICLE-RIPENING FACTOR

The first test reaction—i.e., the formation of large follicles—was obtained from injection of urine from patients with endocrine disorders like Graves's disease and myxœdema, climacteric and castrated patients, and women with cancer. The first reaction was therefore useless for the diagnosis of pregnancy. The distinction had suggested that the first reaction might be produced by a different substance altogether from that producing the other two. Experiment had shown that it was possible to obtain these two apart from the first, and vice versa. He had therefore called the two factors the follicle-ripening and the luteinising factor respectively. He had then experimented on the bursting of the follicle in the infantile mouse. In most animals the follicle burst spontaneously during heat, but in the rabbit and ferret it burst 12–18 hours after coitus, and bursting could be prevented if the pituitary were destroyed an hour (but no more) after coitus. Anterior pituitary extract produced bursting of the follicle. The process in the sexually mature ovary was as follows: at puberty the follicle-ripening hormone produced maturation of the follicle, and after this typical œstrous changes occurred in uterus and vagina. Then for some reason unknown the luteinising factor became operative, the follicle ruptured and a corpus luteum was formed. The rupture was not mechanical but hormonal. The follicle could be made to rupture in infantile animals by injecting the two factors one after the other—e.g., first the urine of castrates, and then ammoniacal extract of anterior pituitary. The hypophysis of infantile animals contained active gonadotropic substances before puberty, but these had no effect on the ovary beyond causing some enlargement of the granulosa cells, because the substances did not work until the ovary had been sensitised by the follicle-ripening hormone. Administration of the two factors in the right order would, Prof. Aschheim was convinced, give good therapeutic results in cases of amenorrhœa due to ovarian insufficiency resulting from a functional disturbance of the hypophysis. A mixture of the two factors could produce only fortuitous results.

Certain changes in the ovaries of pregnant women could only be explained as the result of abundant quantities of these gonadotropic substances—for example, overgrowth of the theca in atretic follicles. If the body were flooded with the hormones, as in hydatidiform mole, large lutein cysts were formed. Anterior pituitary hormone should be cautiously used, because the women to be treated had not usually many follicles in their ovaries, and those they had needed to be preserved. In the field of hormone research individual glands had to be selected out of the "incretorium" for study, and then replaced so that they might once more collaborate in the "consensus partium" of the endocrine system. The function of endocrine glands depended closely on vitamins, and coöperation of all branches of research was needed for the solution of the problem.

DISCUSSION

Prof. E. C. **DODDS** emphasised the importance of the work of Prof. Aschheim and Prof. Zondek in the study of these hormones. He described an investigation on an ovariectomised pregnant woman who went to term. Both œstrin and prolan were excreted in approximately normal amounts, so that the ovary could not be their source. Many compounds excreted by pregnant animals could produce œstrus, but they differed markedly in their chemical properties. The œstrus lock could be opened by a skeleton key very little related to œstrin. Therefore caution was necessary in the study of œstrogenic substances, as, for instance, those in coal and anthracene. He was not convinced of the existence of two prolans, and thought the histological evidence a dangerous ground for argument; he would like to see the follicle-producing and luteinising substances in two separate and distinct bottles.

Mr. A. S. **PARKES**, D.Sc., asked Prof. Aschheim to elaborate his views on the source of œstrin in the non-pregnant animal (the substance was produced in animals deprived of Graafian follicles) and on the possible identity of the substances in pregnant urine, in the anterior pituitary, and in the placenta. The three seemed likely to be closely related chemically, if not identical.

The **PRESIDENT** pointed out that Prof. Aschheim was a busy practising gynæcologist, and his work settled the question whether clinicians were fitted to do research work. He, also, would like to know the grounds for believing in the existence of two prolans. The effects of castration supported the belief in two, but the corpus luteum and the granulosa cells were antagonistic. The ripening of the follicle, followed by the formation of the corpus luteum, needed much explaining if the two were not parts of one physiological process. He believed that cancer would give the pregnancy test. About a year ago he had seen a girl of 14 with ovarian sarcoma, and the Zondek-Aschheim test had been strongly positive, not quite as strongly as in chorion epithelioma. After incomplete operation the test was still positive. After lead treatment she became well, and the test had remained negative. Other patients had shown similar results. Granulosa-cell cancer might be due to some stimulus such as the anterior pituitary, but it often appeared after the menopause. If the stimulus was external, why should the growth be unilateral? It was often bilateral in younger women, and the answer might be that in older patients only one ovary contained granulosa cells. Much work remained yet to be done. The only proof that the pituitary produced prolan was that pituitary implantations also stimulated the genital organs.

Prof. ASCHHEIM, in reply, referred to his experiments, suggesting that prolan A and B were different substances. He had never seen "A" reactions after giving injections of "B." It was for the chemist to separate them. Possibly œstrogenic substances from the food or from other organs might reach the blood stream, but the production of prolan by other glands was not proved. He thought the girl described by the president had had a chorion epithelioma ectodermale as described by Pick; these growths were seen in men, women, and children. One kind of pituitary cell must produce more than one hormone; it was not yet possible to say which cells produced which substance.

CLINICAL SECTION

THE meeting of this section held on Dec. 8th, under the presidency of Dr. BERNARD MYERS, was devoted to a consideration of

Diseases of the Suprarenal Gland

and to the demonstration of illustrative cases and specimens.

Prof. H. H. WOOLLARD spoke on the

ANATOMY AND PHYSIOLOGY OF THE ADRENAL

He said that the term *adrenal* was more suitable on topographical grounds than the more commonly used term suprarenal. The separate nature of the cortex and the medulla was supported by evidence from every angle. The medulla became invested by the cortex in the higher vertebrates; in the lower they remained separate. In the course of evolution the medullary, or chromaffin tissue, as it was called from the staining reaction of the adrenaline granules in its cells, became concentrated and reduced in amount while the cortex increased in size. The *medulla*, the chief representative of the chromaffin system in man, was developmentally formed from neuroblasts which were changed into secretory cells. It was innervated abundantly by the splanchnic nerves and ganglion cells were often found in it. T. R. Elliott discovered that the splanchnic nerves to the medulla controlled the production and the discharge of adrenaline, and that these nerves to the suprarenal medulla were all preganglionic fibres. The transformed secretory neuroblasts of the medulla were the homologues of sympathetic ganglia, and their post-ganglionic fibres had here the form of a chemical secretion, adrenaline, distributed by the blood stream. Adrenaline was both anatomically and physiologically a sympathomimetic substance. The *cortex* was derived from the epithelium of the mesonephric ridge in close proximity to the developing gonad. The cell mass so produced became excavated later by the ingrowing chromaffin tissue. These two parts received their blood-supply from three arterial sources in such a way that each had its own arterial capillary bed, but they shared a common venous plexus and a single efferent vein. Prof. Woollard said that the cortex of the suprarenal is unique in that it undergoes a sudden and considerable reduction in mass immediately after birth. Elliott was one of the first to discover that this reduction is due to the disappearance of the inner portion of the cortex. The function of this transient cortex, which is peculiar to man and the apes, had not been discovered. Despite the subdivisions of the cortex founded on the shape of the cell columns, or on the cell inclusions, or differences in staining, it was probable that the cells are all alike, except that the younger cells are superficial, and the ageing and dying cells are next to the medulla. The cortical cells contained fats, lipoids, and granules. The fats became transformed into more complex double refracting bodies, and as these latter increased so the fats diminished. The granules were true cellular products indicative of secretory activity.

Three functions of the cortex were more or less definitely known: it was a storehouse of vitamin C in those animals, like man and the guinea-pig, which cannot synthesise their own vitamin C. It was essential to life. All animals, except for one or two species that may be preserved by the presence of aberrant cortical tissue, died in about a week after complete adrenalectomy. The animals remained apparently well for a few days and then passed into a state of profound asthenia, followed by convulsions and death. This result could be averted, with complete restitution of well-being, by the use of an extract discovered by Swingle and Pfiffner. Investigation of the changes due to adrenalectomy, now facilitated by the use of Swingle and Pfiffner's extract, showed a retention of waste products in the blood and a profound alteration of carbohydrate metabolism. The very recent work of R. Loeb and his collaborators had further shown that there is an immense loss of sodium from the body. They suggested that the cortex controls the sodium balance of the body in the same way as the parathyroid controls the calcium and the phosphorus balance. The third property associated with the cortex was its proven ability to cause the production of masculinising hormones when it had undergone simple hyperplasia, or more particularly malignant change. These hormones intensified the masculinity of males and produced sex reversal in females. This adrenal-gonad relationship was well founded, and several cases of sex reversal in females had been cured by removal of these suprarenal tumours. Since the gonad alone was the source of the hormone which produces and maintains the accessory and secondary sexual characters, the adrenal cortex must affect the gonad. Though there were chemical and morphological reasons for associating the adrenal cortex, the corpus luteum, and the interstitial cells of the testis, experimental proof of this association was still lacking. The discovery of pituitary basophilism introduced an additional complication, for investigation at the moment suggested that the basophil cells of the pituitary, without obvious changes elsewhere, might produce many if not all of the clinical features seen in women with suprarenal carcinoma. In the present state of knowledge the pituitary might be admitted as a cause of adrenal hyperplasia, but not as a cause of sex reversal, for its gonadotropic hormones acted indifferently upon either the ovary or the testis, and it is the gonad then which elaborated the endocrine activity proper to it.

Dr. T. STACEY WILSON described investigations of the action of suprarenal secretion upon the circulation when given orally as an extract. His communication was illustrated by records of arm pulsation taken with the sphygmomanometer armlet and three types of aneroid pressure gauge. Dr. Wilson had reached the conclusion that the venules played an important part in the maintenance of the blood pressure through the instrumentality of the suprarenal when contracted, and the thyroid when relaxed. Nervous control was of secondary importance in the venules, contrasting with the conditions obtaining in the main arteries. There nervous control was dominant, and endocrine control secondary. Dr. Wilson also produced statistical evidence that an arm pulse volume of 4 mm. at 90 mm. Hg armlet pressure (as recorded by the Tycos aneroid) is associated with the slight cardiac inefficiency liable to occur after influenza and catarrhal ailments in general.

Dr. S. LEVY SIMPSON dealt with

CLINICAL AND PATHOLOGICAL ASPECTS

He said that 75 per cent. of cases of Addison's disease were due to tuberculosis, 20 per cent. to atrophy, and 5 per cent. to other causes, such as syphilis and secondary neoplasm. Atrophy of the adrenal cortex might be associated with atrophy of the pancreas, leading to diabetes mellitus, or with atrophy of the thyroid, leading to myxœdema. The cortical lesion was the essential factor in producing the symptomatology of Addison's disease, although a medullary lesion might play a part in it. There were some 50 symptoms and signs of Addison's disease, practically all of which could be produced in animals by adrenalectomy. It had been stated that pigmentation, low blood pressure, and hypoglycæmia had no counterpart in adrenalectomised animals. This was not, however, true if such animals were kept in a chronic state of insufficiency by inadequate doses of cortical extract. Wasting was a very important manifestation of adrenal insufficiency both in animals and man, whilst hiccup and conjunctivitis were two minor symptoms of considerable significance which were apt to be overlooked. The microcytic anæmia which occurred was probably secondary to the achlorhydria, and responded to iron therapy. A relative lymphocytosis occurred even in the absence of secondary anæmia.

The maintenance dose of cortical extract for different species was: rats, ½ to 1 c.cm.; dogs, 1 to 2 c.cm.; cats, 2 to 3 c.cm.; monkeys, 6 to 12 c.cm.; man, 10 to 20 c.cm. This gave an indication of the practical difficulty of treating the more severe cases of Addison's disease over a long period, although a patient who had recovered from a severe crisis might maintain good health on a dose of 5 c.cm. daily. Dr. Levy Simpson said that comparison between cortical extract and insulin was quite justifiable, but must be qualified by a recognition of the inherent difficulties of administering large quantities of a relatively weak extract. He advocated slow continous intravenous salines and glucose by the drip method in a crisis, as rigors and pyrexia often followed the usual method of administration. In the presence of infection it was essential to double the maintenance dose of extract in the early stages. Some patients were able to leave off taking cortical extract, remaining well for some months; and adequate therapy with cortical extract led to a decreasing daily requirement. If, however, the tuberculous or the atrophic process progressed, the daily dose of cortical extract might have to be correspondingly increased. For continuous therapy the intramuscular or deep subcutaneous route was preferable to the intravenous route, and avoided the danger of the allergic reaction that occasionally occurred. Accessory methods of treatment were: adrenaline by injection and by mouth, whole dried gland by mouth, Rogoff's extract by mouth, sodium chloride, vitamin C, cotton-seed oil, glucose, fluids, and tuberculin. As regards the use of cortin in conditions other than Addison's disease, there was no convincing evidence of its value in myasthenia gravis, muscular dystrophies, most types of neurasthenia, essential hypotension, and hyperthyroidism. It was reasonable, however, to consider its use in certain cases of pregnancy, infection, post-infective debility, the dehydration phases of chronic intestinal obstruction, after severe operations (especially with previous malnutrition), pyloric obstruction, marasmus, diarrhœa, and vomiting; also in hypocorticalism, including, perhaps, one variety of neurasthenia. An interesting recent finding was the high concentration of vitamin C in the cortex. It had been claimed that vitamin C decreases the pigmentation of Addison's disease; but cortical extract, however, did not contain this vitamin. Scurvy and pellagra might occur in Addison's disease, and Addison's disease may occur in chronic pellagra. Malnutrition resulted in hypertrophy of the adrenals, followed by congestion, hæmorrhage, and atrophy.

The clinical manifestations of adrenal tumours were: pseudo-hermaphroditism (masculinisation), homosexual precocity in both male and female and heterosexual precocity in the female, masculinisation of the female, and feminisation of the male. In contrast, adrenalectomy and some cases of Addison's disease showed the following features: cessation of œstrus, abortion, absence of lactation, degeneration of testes, atrophy of seminal vesicles, and changes in pituitary gland. Injections of cortical extract and cortical transplants were, however, disappointingly negative. Further, cortical extract did not repair the atrophy of sex organs following hypophysectomy; nor did it apparently influence the action of testicular extract or of prolan (Korenchevsky and Levy Simpson). It would seem that the secretion of the cells of a cortical tumour (or even of a cortical hyperplasia) was different in quality from that of a normal adrenal gland. In a case of masculinisation of a female, with enlarged clitoris (shown at the meeting), the urine appeared to contain a high content of the male comb growth stimulating hormone. If this preliminary observation were confirmed, it was of considerable significance and might differentiate certain types (or perhaps certain phases) of masculinisation. Harvey Cushing had made an invaluable contribution to the present subject by drawing attention to the occurrence of a basophilic adenoma in certain types of masculinisation. In these cases there was generally a hyperplasia of the adrenal glands, probably secondary. There was, however, no reason for believing that primary tumours of the adrenal glands did not occur and lead to secondary changes in the anterior pituitary in the direction of basophilia. If a basophilic adenoma of the pituitary influenced sex, it would appear that it did so principally by inhibiting the homosexual glands of the individual. Cushing's syndrome could occur in the absence of a basophilic adenoma, as had been seen in the male patient of Leyton, Turnbull, and Bratton, and the female patient of Kepler (Mayo Clinic). The recognition of the pituitary factor by Cushing and the new Ponceau fuchsin stain for the adrenal cortex introduced by Broster and Vines would aid the morbid anatomist in establishing a more certain pathology when future cases came to be investigated.

CASES AND SPECIMENS

The following cases and specimens were shown:

Dr. J. C. Heather (introduced by Dr. Gordon Sears): A case of Addison's disease in which the symptoms had appeared since a compression fracture of the first lumbar vertebra three years ago. There was associated syphilis, the Wassermann reaction being strongly positive in blood and C.S.F., and the C.S.F. showing a paretic gold curve. Dr. Stollkind recommended that the patient should not be given malarial treatment, but should receive small doses of arsenic.

Dr. G. M. Wauchope: A case of adrenal insufficiency in a woman of 33, the patient having been under observation for seven years. There had been progressive improvement in the general health, with gradual disappearance of pigmentation during this time, although the treatment had admittedly been inadequate for true Addison's disease. It was suggested that there had been some damage to the adrenal, with a tendency to spontaneous recovery.

Dr. Levy Simpson: A case of Addison's disease, treated during a crisis in 1930 with concentrated cortical extract, with dramatic recovery. The patient has remained in good health during the past three years without specific treatment.

Dr. Levy Simpson and Mr. Alan Brews: A woman of 39 with Addison's disease, who had had a subtotal hysterectomy successfully performed whilst under treatment with daily injections of Eucortone. The patient had also been treated with benefit with Dr. Rogoff's cortical extract Interrenalin, administered by mouth.

Dr. Levy Simpson and Dr. C. Gordon-Wilson: A case of Addison's disease (a woman of 31) who developed tetany whilst under treatment in hospital with eucortone. Blood analysis at this time showed a serum calcium value of 11 mg. per 100 c.cm., and plasma phosphorus of 1·5 mg. per 100 c.cm. The spasms ceased almost immediately on injection of 8 c.cm. 5 per cent. calcium chloride solution intravenously.

Dr. Dorothy Hare and Dr. Levy Simpson: A case of Addison's disease treated for two periods with daily intramuscular injections of Eschatin. The injections were followed by rapid improvement, and the patient remained in good health for three months following the cessation of treatment. Symptoms then recurred. Dr. Hare drew attention to the prohibitive price of cortical extracts at the present time.

Mr. F. W. M. Pratt: A pseudo-hermaphrodite with suprarenal cortical hyperplasia. The patient, a girl of 10½, had shown hypertrichosis since the age of 6. The external genitalia showed marked overdevelopment of the clitoris, with the urethra opening at its base. The labia majora were well developed, but there was no vagina. A laparotomy was performed, and the uterus was found to be very small and continuous with a solid column of tissue representing the vagina. The right ovary appeared normal, the left larger than normal, containing a few follicular cysts. The right suprarenal gland was normal in size, and the left appeared to be slightly enlarged on palpation.

Dr. Clifford Hoyle (for Dr. Cecil Wall): Adrenogenital syndrome in a girl first seen at the age of 18½ complaining of increasing obesity and amenorrhœa, with hirsutes of face and shoulders for one year. She then showed male distribution of pubic hair, marked striæ atrophicæ of breasts, axillæ, thighs, and trunk, plethoric appearance of face, and a consistently raised blood pressure. The external genitalia were normal. The C.S.F. was tested for presence of a pressor substance by injection into a pithed cat, with negative result. In view of the close correspondence with Cushing's syndrome, the patient had been treated with X ray therapy to the pituitary; subsequently thyroid administration and strict dieting had caused decrease in weight and some general improvement. Dr. Hoyle drew attention to the bone changes that often occur in cases of this type. In this instance the serum calcium and plasma phosphorus and controlled radiograms were normal, but there was a slightly irregular calcium balance. The sugar tolerance was raised. The possibility of the raised blood pressure being related to hyperactivity of the pars intermedia of the pituitary must be considered. In the investigation of the C.S.F. of two other cases of this type (Cushing's syndrome) Dr. Hoyle had found one without influence on the blood pressure of the pithed cat or the melanophores of the frog, and one slightly positive in each instance. Thus two out of three of his cases gave no indication that the pars intermedia was excessively active.

Dr. Alison Macbeth and Dr. Levy Simpson: Two cases of adrenogenital syndrome. The first, a woman of 28, had had irregular and scanty menstruation since its commencement at the age of 17, and hair had been present on the face since 14. At this time the voice was noted as being very deep; the skin had been getting darker recently. She bore a child at the age of 24, but sexual appetite and maternal feelings had been conspicuously absent; she had been troubled recently by clitoric erections. The patient showed increased pigmentation and some hirsutes, with definite enlargement of the clitoris and prepuce. The carbohydrate tolerance was lowered. The second case showed a less marked degree of hypertrichosis, with some obesity and scanty menstruation. The carbohydrate tolerance was lowered. The mothers of both patients died from diabetes mellitus.

Dr. R. C. Lightwood (by permission of Drs. Frew and Cockayne): Specimens from a case of renal aplasia with cortical adrenal hyperplasia. The patient had been diagnosed as renal rickets at the age of 1½ years, when he showed albuminuria, a raised blood-urea (77 mg. per 100 c.cm.), serum calcium 12·3 mg. and plasma phosphorus 7·2 mg. The skin was then brownish-yellow. A year later he showed, in addition to stunting and rachitic deformities, a localised obesity and slight hirsutes; the genitalia were normal. The blood-urea was 200 mg. per cent. He died six months later from a staphylococcal infection, aged 3 years 4 months. At post-mortem the kidneys were found to be small and sclerotic, with reduction in width of the cortex, and the suprarenals showed diffuse hyperplasia, together weighing more than the two kidneys. The bones showed gross deformity, decalcification, and active rachitic changes.

Dr. R. W. B. Ellis (by permission of Dr. H. Thursfield): Two specimens, the first from a pseudo-hermaphrodite aged 8 months. The adrenals showed great hyperplasia. There were ovaries, Fallopian tubes, and uterus present, with a vagina ending blindly at its lower end. The vaginal orifice was represented by a dimple in the perineum. Externally, the genitalia were those of a male with first degree hypospadias and absent testicles, there being a well-formed penis with the urethral orifice immediately below the glans, and a small empty scrotum. The second specimen showed bilateral suprarenal hæmorrhage following breech delivery of an infant who had died at the age of two days from an extensive tentorial tear.

Dr. F. Graham Lescher and Dr. A. H. T. Robb-Smith gave the history and pathological findings of a case of carcinoma of the adrenal cortex with Cushing's syndrome. The patient had shown obesity, hirsutes, amenorrhœa, a raised blood pressure, and plethoric appearance; there was a generalised decalcification of most of the bones. A left suprarenal tumour (a cortical carcinoma) was removed at operation. Post-mortem, serial sections of the pituitary showed a minute, non-encapsulated collection of basophil cells (0·3 mm. in diameter), and a percentage of basophil cells of 17 (as compared with a high normal figure of 10 per cent.).

Specimens lent by the Royal College of Surgeons and by St. Bartholomew's Hospital were also shown.

Ward and Dormitory Infections.—By a slip, which we much regret, some remarks made by Dr. E. K. Le Fleming in the discussion at the Medical Society of London (The Lancet, Dec. 9th, p. 1318)—beginning "'Pink eye' (infective conjunctivitis) was another annoyance . . ." and ending ". . . on the look out for their earliest symptoms"—were attributed to Dr. J. A. Glover.

MEDICAL SOCIETY OF LONDON

At a meeting of this society on Dec. 11th, with Sir John Thomson-Walker, the president, in the chair, a discussion was held on

Staphylococcal Infections

Mr. **Claude Frankau**, in opening, described the staphylococcus as the most treacherous organism met with in surgery; sometimes it was comparatively innocuous, sometimes it was very virulent. Its general effects, however, were constant and characteristic—namely, a tendency to produce thrombosis in blood-vessels and lymphatics, and a necrosis of the tissues. In staphylococcal infections there was little tendency to spread by way of lymphatics, and it was rare for glands to be infected; in these respects the organism differed materially from the streptococcus. Invasion of the blood stream by staphylococci must be very common, though at the time the case was seen there might be little clinical or bacteriological proof of it. Such invasion might be manifested in osteomyelitis, in perinephric abscess, or in suppuration of joints. Most people with these had suffered from boils.

CARBUNCLE AND ITS TREATMENT

The carbuncle Mr. Frankau defined as an acute infective process, staphylococcal in origin, starting in the subcutaneous tissue and proceeding to necrosis of the affected tissues. It had three clinical stages: invasion, necrosis, resolution. In the first of these, a deep red brawny area was seen, and the infected part enlarged rapidly, to the accompaniment of intense pain, its degree depending on the tension present. Those on the face were more dangerous but less painful than those on the back of the neck and other parts. It was usual for the patient's temperature to rise to 102° F. or over. This stage usually lasted four days, but in a person of low resistance it might persist seven or eight days. There was only a moderate exudate of leucocytes. The necrotic stage was usually heralded by a further rise in temperature, and some decrease in the pain. If untreated, the little pus points in the area coalesced. As soon as openings into the lesion were made, the pain ceased. After sloughing, healing was rapid. The final separation of the sloughs might be accompanied by rigors, since fresh areas were then open to absorption. During this stage secondary gland involvement might occur.

Methods of treating carbuncle varied from masterly inactivity to excision of the whole area of the lesion. A too active intervention was certainly wrong, while inactivity prolonged the suffering unnecessarily. The aim should be to relieve tension without causing much local disturbance or delay in healing. During the invasion, if the pain was not too intense and pyrexia was only moderate, heat should be applied, and analgesic drugs should be given. If the pain was very severe, surgery was essential; it was too often withheld in early stages. The safest method was to make a series of incisions, of gridiron arrangement, ¾ in. apart, confined to the affected area, and not going through the infected mass. Moderate hæmorrhage was checked by compresses of carbolic, left on for two hours; these were also analgesic. In the second stage it was best to cut out, with scalpel or diathermy knife, a circular area of skin amounting to a fourth of the infected area from the centre of the carbuncle, and make peripheral incisions towards the boundary of the infection but not quite reaching the edge; this relieved tension and allowed free drainage, and the protective layer of tissue had not been encroached on. There should be no scraping away of the necrotic mass. Usually the resultant scar was very small with this treatment. The initial dressing should be a light packing with gauze soaked in hypertonic saline; afterwards the carbuncle might be painted with picric acid, and this should be continued until healing was complete. Flavine or brilliant green he had found of little value. Active interference with sloughs was to be deprecated, since blood invasion by cocci was a danger. He had known two patients get septicæmia through the squeezing of boils. Throughout the infection the patient should be fed generously, usually with alcohol in some form. From 7 per cent. to 10 per cent. of patients with carbuncle had been found to be diabetics, and effective control with insulin would greatly lessen its incidence among them. As to subsidiary treatments, he had found vaccines useless, if not dangerous. But the staphylococcus antitoxin recently introduced seemed to have considerable value in early stages and in toxic cases. Of 119 patients with carbuncle within his knowledge admitted into hospital, three died, two of them within 24 hours of admission (one of diabetic coma, the other of septicæmia) and one three weeks later from diabetes.

Mr. Frankau also spoke about perinephric abscess, many cases of which, he said, were seen during the late war in soldiers who had been accustomed to having boils or other staphylococcal skin lesions. Probably these men had had a mild blood infection all the time. Sometimes the condition was secondary to small cortical abscesses on the surface of the kidney.

DRAINAGE OF ABSCESSES: VACCINES

Dr. **Hugh Thursfield** said that boils arising from sweat glands and hair follicles were the commonest recognised forms of staphylococcal activity. When the organism was found in deeper tissues, it must have got there by blood infection. In the acute stages of staphylococcal pyæmia or septicæmia, when an abscess was brewing in the body, blood cultures were nearly always positive, but when the abscess had been opened, staphylococci disappeared from the blood. When a new abscess began, the organism was again found in the blood, only to disappear once more when the abscess was drained. Provided a staphylococcal abscess could be reached and evacuated, the chance of the patient's recovery was much greater than with streptococcal or pneumococcal infection. Occasionally he had seen infections of the urinary tract which were said to be primarily staphylococcal, but as a rule further investigation showed that the urine was secondarily infected. Staphylococcal empyema he regarded as uncommon, though it was seen occasionally in infants and quite young children; it was quite divorced from any skin or ear infection. For treatment he had often heard mercurochrome praised, but he had not seen success with it. It was very unlikely that any substance of antiseptic value could be got into the body in sufficient quantity and strength to produce a real antisepsis in the presence of pyæmia. He trusted to antitoxic, antimicrobic methods. And he had faith in vaccine treatment; it was rational, and its experimental foundations were sound. He had had special experience with immuno-transfusion.

The most recent case he had had was that of a small baby with a pure *Staphylococcus aureus* empyema, the heart completely on the right side of the chest, blue and gasping for breath on admission, and requiring instant relief. A large needle was put in and 7 oz. of pus was drawn off. On the next day 10 oz. of pus was drawn, and the next day 7 oz. So much improvement had set in by the third day that the surgeon, who had previously refused to operate, removed a portion of rib and drained. For a time improvement was kept up, but then the child began to go downhill and nothing seemed to check that course. Therefore 750,000,000 of recent staphylococcal culture was given subcutaneously to the mother, and five hours later 300 c.cm. of her blood was drawn off, 250 c.cm. of it being injected into the infant. From that moment recovery was steady.

Work in America and France suggested that bacteriophage therapy of staphylococcal infections was well worthy of trial and consideration.

TOXOID AND ANTITOXIN

Dr. L. E. H. **Whitby** dealt mainly with specific immunisation methods which could be used in the treatment of recurrent staphylococcal infections of the skin, pointing out that until recently no method of controlling the immunity to such infections had been devised which could replace the accurate but impracticable opsonic method of Wright. Many irrational remedies were used in the treatment of such infections, and most of these were merely leucocytic stimulants. If ordinary vaccine was to be used as the specific immunising agent it was possible that intracutaneous inoculation in small doses, following the principles of Besredka, would give better results than inoculation by the subcutaneous route. Experience with antivirus had not yet provided evidence that this substance was of value. The recent discovery of exotoxin-producing strains of staphylococci had given immense scope for an efficient specific treatment of both acute and chronic staphylococcal infections. The toxin was easily convertible into toxoid thus providing an antigen suitable for active immunisation of human beings to which there could be no theoretical objection. Both the toxin and toxoid were good antigens as judged by animal immunisation.

Staphylococcal toxin was composed of a hæmolytic factor, a dermo-necrotising factor and an acute lethal factor. It was possible to estimate the anti-hæmolytic power of a serum for staphylococcal toxin. Immunisation with toxoid could therefore be controlled by estimations of antihæmolytic titre. Fourteen out of sixteen cases inoculated intramuscularly with toxoid had shown marked clinical improvement coinciding with a five to tenfold rise in antihæmolytic titre. No cases had had toxic or general reactions. Dr. Whitby, unlike some other workers, had found in staphylococcal subjects before immunisation an antihæmolytic titre identical with that of normal persons. Encouraging results from the use of toxoid had been reported from America. For staphylococcal septicæmia and acute toxic staphylococcal conditions, the antitoxic serum prepared by immunising horses with toxin or with toxoid was a valuable remedy.

Dr. R. A. **O'Brien** said that staphylococcal toxoid and antitoxin offered new hope in the handling of cases of these various infections. On the laboratory side the evidence was clear-cut. Toxins would kill laboratory animals; animals could be immunised with toxoid to stand lethal doses, or they could be protected with antitoxin. What were the indications and limitations it was for future work to settle, but he had seen highly favourable results from these measures. The use of toxoid rested on three assumptions: (1) that the antistaphylococcal titre of patients suffering from staphylococcal lesions was lower than it should be; (2) that the titre could be raised by injection of toxoid; (3) that a clinical improvement would coincide with the increase.

FURTHER DISCUSSION

Mr. **William Ibbotson** said that in otitis m
intracranial complications due to streptococci
much more frequent and serious than those du
staphylococci.

Mr. **Zachary Cope** did not see the need for alc
in the cases under discussion. He saw no harm
incising a carbuncle beyond the area of the infla
edge. He always turned four flaps back and un
cut until he reached healthy tissue; after rem
of necrosed material, and dressing, it healed rap
Diet had not been mentioned in connexion
ætiology; he knew people who could produce
in themselves with certainty by eating the flesh
the pig in any form. Was that because this low
the resistance to staphylococci?

Dr. H. **Warren Crowe** said that 20 years ago
brought forward evidence that white staphyloco
was the cause of rheumatoid arthritis. He belie
Nile boil was one of the Plagues of Egypt; it
a kind of super-carbuncle, and he had seen th
boils the size of a cocoanut.

Mr. E. D. D. **Davis** spoke of staphylococcal infect
in the nasal sinuses, which was always difficult
deal with because there was a good deal of necro
Similar infection also occurred in the upper
lower jaws after tooth extractions. He
sporadically tried antistaphylococcal serum,
not with a very happy result.

Dr. R. J. V. **Pulvertaft** said that many cases
staphylococcal empyæma were the result of prolong
drainage of ordinary pleural effusions, syringes
needles not having been surgically clean. He
used antistaphylococcal serum in six cases, but
not been impressed by its benefit; two of
patients died.

Dr. J. W. **McNee** said it was quite clear t
Staphylococcus aureus varied greatly in its virulen
In animals he had several times produced p
renal abscess, and always it was from a small sep
infarction in the cortex of the kidney. He
sure that was the only mechanism. He agre
that some people developed boils after taking cert
articles of diet.

Dr. **Gordon Goodhart** thought the majority
cases of renal calculus grew *Staphylococcus alb*
In his experience immuno-transfusion was of no
unless there was leucopenia.

Dr. C. E. **Lakin** said that in many cases in whi
perinephric abscess was diagnosed, *S. aureus* w
present. There was a type of case in which ston
continued to be formed in the kidneys; he thoug
that was because the organism broke up the ur
and liberated ammonia, phosphates being deposited.

Dr. **Walter Broadbent** said his experience
cases of pneumonia in which staphylococci appear
in the sputum was a sad one; he expected su
patients to die.

The **President** said it had been proved that
blood infection of the kidney the cocci infected t
cortex, whereas bacilli affected principally the pelv
of the organ. There might be a long interval betwe
the original infection and the formation of the per
nephric abscess, many weeks of apparent healt
supervening. He thought it was the same infectio
all the time.

Memorial to a Medical Man.—A cot in th
children's wing of the Darlington Memorial Hospital ha
been presented by local subscriptions in memory of Dr
Llewellyn Nash, who worked for many years in Shildon
near Darlington, and died in 1918.

REVIEWS AND NOTICES OF BOOKS

Spread of Tumours in the Human Body

By RUPERT A. WILLIS, M.D., B.S., D.Sc. Melb. Pathologist to the Alfred Hospital and to the Austin Hospital for Chronic Diseases, Melbourne. London: J. and A. Churchill. 1934. Pp. 540. 25*s.*

IN these days when the term cancer research means to nearly everybody the hunt for the cause or cure of cancer it is surprising and rather refreshing to come upon a book devoted entirely to the study of the spread of tumours in the human body. It is true that in his preface Dr. Willis suggests that studies such as his may uncover some of the secrets of neoplastic growth, as indeed they may; but that was not his object in writing this book. He writes as a naturalist who happens to be particularly interested in that branch of the science of biology which we call pathology, and to him the study of a neoplasm is incomplete unless it embraces all parts of that neoplasm. Whereas to the average pathologist, as to the clinician, the dissemination of a tumour is of importance because it influences treatment and prognosis, to Dr. Willis it is of interest as a manifestation of the tumour's life-history, and a small metastasis tucked away in some dark corner of the body is just as important as the massive deposit which causes symptoms.

The basis of the book is Dr. Willis's wide personal experience of malignant disease. On to this he has grafted a very extensive and critical survey of the literature, about 2500 references are given in the bibliography, and the work as a whole gives a very complete account of what is known of the subject. It is divided into two parts. Part I. is devoted to a general discussion of dissemination by the lymphatics, by the blood stream, by implantation, and so forth. It contains particularly interesting chapters on rare and special types of metastases, latent primary tumours, the susceptibility of tissues to metastasis, the stroma of tumours, and the bearing of experimental work on the problems of metastasis. Part II. is devoted to a discussion of secondary neoplastic disease in individual organs and tissues. In an appendix is given a synopsis of 323 autopsies of cases of malignant disease, performed by the author or under his supervision. From the description of his technique, and the abbreviated notes of the cases, it is easy to see why he nearly always finds a higher proportion of secondary growth than is quoted in other published records. The moral is that it is difficult to see almost anything unless one really looks for it.

Dr. Willis has accomplished a sound bit of work, and has written a book which will be invaluable as a work of reference to all interested in the subject of malignant disease.

Gynécologie opératoire

Second edition. By HENRI HARTMANN, Professeur honoraire de clinique chirurgicale à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Paris: Masson et Cie. 1933. Pp. 585. Fr.110.

THIS book is a complete treatise on the treatment of gynæcological diseases. It begins with a chapter on clinical examination, which is followed by sections dealing with medicinal treatment, radiotherapy, hydrotherapy, and other forms of physiotherapy in gynæcology. After detailed descriptions of operations Prof. Hartmann discusses the indications for various forms of treatment in gynæcological disorders and compares the results attained. A final section deals with the surgery of the ureter and bladder. The operations are well described and illustrated, and the opinions expressed on the indications for and against surgery are sound. The conclusions and recommendations are usually in accord with current English practice, but this does not apply to the section on hysterectomy. Here considerable space is devoted to detailed descriptions of difficult operations with high mortalities such as perineal, paravaginal, and parasacral hysterectomy, which present no advantage over the ordinary abdominal and vaginal operations. The chief omission, from the English point of view, is that of Fothergill's operation for prolapse which surely deserves mention. The accounts of abdominal operations are for the most part satisfactory, though more detail about the technique of certain procedures would be welcome. This applies especially to operations such as resection of the hypogastric plexus, which have become popularised chiefly through the work of French surgeons.

The Adrenal Cortex

A Surgical and Pathological Study. By L. R. BROSTER, O.B.E., D.M., M.Ch. Oxf., F.R.C.S. Eng., Surgeon to Charing Cross Hospital; and H. W. C. VINES, M.A., M.D. Camb., Pathologist, Charing Cross Hospital Institute of Pathology. London: H. K. Lewis and Co., Ltd. 1933. Pp. 94. 6*s.*

THIS short monograph gives a good account of the authors' personal clinical and pathological investigations into what has been termed the adrenogenital syndrome, where lesions of the adrenal cortex, in women, are associated with hirsutism and virilism. From the observations of many clinicians and pathologists, it is known that the pathological lesion in this syndrome may be a diffuse cortical hyperplasia, or neoplastic, either adenomatous or malignant. In the cases here described the lesion has usually been a diffuse cortical hyperplasia. It is important to note that, in some instances, manifest virilism was unaccompanied by hyperplasia of the gland, and the suggestion made is that here the internal secretion responsible for masculinisation is more active than normal, thus antagonising the ovarian function sufficiently to produce a change-over towards the male type. This opinion is based on Mr. Broster's results from unilateral adrenalectomy, an operation which was undertaken in a number of the present series of cases. It was found that no ill-effects were produced on the general health, a finding similar to that when extirpation of one adrenal is performed in animals. In certain of the authors' cases, removal of one gland resulted in beneficial effects upon the menstrual disturbances and hypertrichosis of this syndrome; in others, however, unilateral adrenalectomy appeared to make very little difference.

The most important finding in this investigation is the suggestive fact that some of the cortical adrenal cells, from the glands removed, have a special affinity for a Ponceau fuchsin differential stain, in this differing from normal glands. This positive fuchsinophil reaction was found in the glands of all cases subjected to unilateral adrenalectomy. The authors put forward the tentative suggestion that the substance so staining may possibly be closely related to the hormone, or its precursor, responsible for the

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THE LANCET

LONDON: SATURDAY, DECEMBER 16, 1933

PNEUMONIA AND ITS SPECIFIC TREATMENT

With a paper on pneumococcal fever—a more comprehensive name for lobar pneumonia—Dr. J. A. Ryle and Dr. R. L. Waterfield introduce a symposium appearing in the October issue of *Guy's Hospital Reports*. The subject is pneumococcal infection in various situations and at various periods of life, and it is one of increasing interest. What may be termed the newer knowledge of such infection began some 20 years ago when Dochez and Avery in America, and Lister in South Africa, showed that the causal organism is of different serological types. The American workers called these I., II., and III., according to the frequency with which they were isolated from cases of lobar pneumonia, and research elsewhere has in general substantiated this view of their relative frequency as infective agents. The severity of the disease is found to vary with the type responsible; thus, in this country, taking crude mortality-rates, type I. pneumococcal pneumonia has a case death-rate about 10 per cent., type II. 20 per cent., and type III. 30–40 per cent.; while in America, though the mortality over all is much greater, there is the same relationship (R. Cruickshank[1]). The differentiation of the types may thus become as important as the differentiation of paratyphoid from typhoid fever, or Flexner from Shiga dysentery. In future, we may designate pneumonia not according to its clinical features, but according to the ætiological agent—as type I., II., or III. pneumococcal, streptococcal, staphylococcal, or whatever it may be.

Recent improvements in the production and application of antipneumococcal serum have increased the practical significance of these and kindred observations. In the last three years the need for data from Great Britain has been to some extent supplied by clinical experiments in Glasgow, Edinburgh, Aberdeen, and London, and a review of the findings at these centres is shortly to be published. Meanwhile those requiring guidance in practice will find it in Ryle and Waterfield's conclusions. They say that they are disinclined to risk a serum reaction in any case where it may be expected, and in previously healthy adults showing a good initial response to infection and a high leucocytosis they would "feel justified in withholding" the remedy. "We are thus left," they say, "with adult cases giving cause for undue anxiety at an early stage and showing a failure of leucocytosis; alcoholics might be included in this group. To these it should be justifiable to give an early dose of Felton's serum, and to continue the treatment if the organism is found to be of appropriate type." This advice, looked at in the light of some of the published work (e.g., Duncan Leys[2]), is, if anything, on the conservative side. It takes cognisance of the necessity for giving the serum early if it is to be given at all, and hence for a bacteriological service which will type the organism accurately with the least possible delay. It is also influenced by the possibility of distressing the patient. But if this form of treatment can be shown to save lives and shorten the duration of illness and convalescence such obstacles are not likely to stand in the way of its more general application. Ryle and Waterfield point out, only too truly, that its expense must be considered; but it is noteworthy that the average cost of the serum required for treating a patient with type I. pneumococcal pneumonia has lately decreased from £10–15 to £2–4, representing a bulk of concentrated and standardised serum of 12–24 c.cm. Again, the difficulties of bacteriological typing and the technique of intravenous serotherapy may be overcome by an organised campaign such as is being conducted by the Massachusetts department of public health. In 1930 the department embarked on a scheme to make serum treatment of pneumonia available in small and poorly equipped hospitals and in general practice, and the results of two years' work, representing 421 cases treated mainly by general practitioners, show a reduction of more than half in the case-fatality rate of type I. pneumonia (R. Heffron and G. W. Anderson[3]). Further advances may be expected in the substitution of subcutaneous or intramuscular for intravenous injection, in the serum treatment of such pneumococcal infections as meningitis and peritonitis, which in the primary form are mostly due to types I. and II., and even perhaps in the production of a pan-pneumococcal antiserum.

The opinion of clinicians and epidemiologists that broncho-pneumonia is a separate disease from lobar pneumonia has now obtained support from bacteriologists. Pneumococci isolated from the sputum or other sources in broncho-pneumonia belong almost entirely to the heterogeneous Group X, and when serologically subdivided are identical with the types of pneumococci found in the throats of healthy people. The natural inference is that these potentially pathogenic pneumococci produce autogenous infection when the resistance of the host is lowered. The problem of broncho-pneumonia is therefore likely to be solved only when a much higher standard of health among the poorer classes is attained and when methods of controlling such infections as measles and whooping-cough have been successfully applied. "Pneumococcal fever," on the other hand, has many features of a specific infectious disease, with a regularly recurring winter epidemic reaching maximum prevalence in the spring. It is possible and even probable that the disease will occur in this epidemic form only in industrial towns where climatic and social conditions foster its spread, and it has to be admitted that the exact mode of transmission is as yet unknown. However, a recent paper by W. G. SMILLIE,[4] of Boston, corroborates earlier American observations on the frequency of types I. and II. pneumococci (the epidemic types) in the throats of family contacts of pneumonia cases, and the Glasgow workers have demonstrated the existence of the convalescent as well as the contact carrier. These are doubtless links in the chain which is bringing lobar pneumonia into line with other fevers. The difficulty of preventing respiratory infections makes it all the more necessary to use available means of lessening the death-rate and incapacity resulting from them, and now that patients with pneumonia are often removed to isolation hospitals, local bodies have an opportunity, through their medical officers of health, of testing the value of antipneumococcal serum. The expense may be partly compensated by a shortening of the stay in hospital and of the period of recovery. It is not altogether irrelevant that about two-thirds of the cases of lobar pneumonia occur between the ages of 15 and 40, an age-period of great economic value to the State. Certainly an organism which, if the deaths from pneumonia and bronchitis are combined, kills almost twice as many people as the tubercle bacillus, deserves the closest possible attention.

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[1] The Lancet, 1933, ., 563, 621.

[2] Ibid., Sept. 30th, 1933, p. 741.

[3] Jour. Amer. Med. Assoc., Oct. 21st, 1933, p. 1286.

TUBERCULOUS MILK

THE public is being enlightened about the extent to which the milk-supply is infected with tubercle bacilli. On Oct. 31st the attention of the London County Council was drawn[5] to the fact that the old method of sending milk to the metropolis in churns was being replaced by the use of large glass-lined tanks, and that the consequent bulking of milk which this practice involved was leading to a pooling of infection not envisaged by the Milk and Dairies (Consolidation) Act, 1915. (A memorandum[6] by the Royal Sanitary Association of Scotland emphasises the same danger.) Information for Scotland is given in a report just issued by the Department of Health.[7] An investigation carried out, presumably during the last two or three years (though no dates appear to be mentioned), into the incidence of tuberculous infection of the milk-supply in Aberdeen, Dundee, Edinburgh, and Glasgow has brought to light some very interesting data. One of its chief objects was to ascertain the frequency of infection of different types of milk. A total of 1534 samples of milk in churns, representative of the produce of single farms, was examined, and 10 per cent. were found to contain living tubercle bacilli. Of 207 samples of milk transported in tanks, 37·5 per cent. were infected. This difference affords some indication of the effect of bulking. That the figure (37·5 per cent.) obtained for tank milk in Scotland is considerably lower than that (83 per cent.) given in the L.C.C. report, or than the 100 per cent. given by F. C. MINETT and E. J. PULLINGER for London tank milk, is presumably due to the fact that in Scotland the average volume of milk examined was about 500 gallons, whereas in London the quantity has been nearer 3000 gallons. An examination of 1243 samples of bulked milk pasteurised by the holding method showed that 2·8 per cent. of them still contained living tubercle bacilli, though there was evidence that the numbers surviving were as a rule comparatively small. With milk pasteurised by the unofficial flash method an even higher proportion of samples (8·2 per cent.) was infected. Tubercle bacilli were found in only one of 714 samples of Certified and Grade A (T.T.) milk—a pleasing indication of the value of tuberculin testing combined with periodical veterinary inspection. Finally, in order to ascertain the actual risk to the purchaser, 1494 samples of retailed milk were examined. These consisted of graded and ungraded, heated and non-heated milk, and since the samples were not collected in numbers corresponding to the total volumes of these different types, a weighted mean had to be calculated. The estimate arrived at was a figure a little above 5 per cent.

It is quite clear from these data that the consumer of ordinary raw milk is exposed to serious risk of tuberculous infection. The reality of this danger has been emphasised in a number of authoritative publications, and was recently chosen as his text by Dr. W. G. SAVAGE in delivering the Mitchell lecture[8] before the Royal College of Physicians of London. The facts relating to the incidence of human tuberculosis of bovine origin are beyond dispute; the main question to be considered is what action can profitably be taken to diminish the dangers of infected raw milk. It is clearly impossible to deal with the situation by means of the Tuberculosis Order, 1925. When a 3000-gallon tank may contain milk from 150 separate farms, nothing short of individual sampling of each supply can enable the sources of infection to be discovered, and nothing short of a further examination of the individual cows in the infected herds will reveal the actual animals at fault. The daily, or even weekly, examination of each tank of milk coming into the London area, with the further series of examinations necessitated by the almost uniform discovery of infection, would be economically impossible. The method of the Tuberculosis Order, 1925, is in fact an approach from the wrong end. What Dr. SAVAGE, and practically all medical and veterinary workers who have studied the subject, are agreed upon is that tuberculosis must be eliminated from our bovine population by building up tuberculosis-free herds. Mr. LESLIE JORDAN'S report,[9] on which we have recently commented, shows how this policy may be successfully initiated, and Dr. SAVAGE'S suggestion that in the furtherance of this scheme special herds should be established for the reception of tuberculin-positive but otherwise healthy cows is worth consideration. In the meantime the only safeguard consists in a widespread system of pasteurisation, jealously controlled so as to ensure complete destruction of all pathogenic organisms.

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[4] Ibid., p. 1281.

[5] THE LANCET, Nov. 4th, p. 1068.

[6] From the Secretary of the Association, 185, St. Vincent-street, Glasgow, C.2.

[7] Med. Research Counc., Spec. Rep. Ser. No. 189. H.M. Stat. Office. Pp. 38. 9d.

[8] Brit. Med. Jour., Nov. 18th, p. 905.

[9] THE LANCET, Nov. 4th, p. 1043.

DRINK

America is now celebrating the second demise of prohibition, counting as a chapter in the story the early movement in the New England States. Misplaced idealism was the licensed midwife that brought the unhappy child into the brave new world; practical common sense declared that it should no longer live. It is too much, however, to expect that its death will bring peace, for the licensing problem will be always present and in America, as here, it remains unsolved. We hope that whatever rules and regulations are made by individual States will be of such a nature that they can be enforced, and that if they cannot be enforced they will not be made; apprehensions here are perhaps needless after the terrible example that has been supplied of the immunity enjoyed by law-breakers. Few responsible people in this country would deny that some control of the drink trade is necessary. We have evolved for ourselves a complicated system, difficult to defend perhaps on logical grounds, but one which works, if to work is to muddle through. There are, however, problems constantly arising which call for a clear expression of opinion. One of these—the advertising of intoxicating drinks—has come into prominence through a recent statement of the director of the Brewers' Society. The insolent claim made by Sir Edgar Sanders, that the continuance of advertising would be contingent on editorial support, was denounced both by responsible representatives of the press and by the Archbishop of Canterbury in last month's meeting of the Church Assembly. But what of the campaign for increased advertisements of intoxicating drinks? Are brewers and distillers in the same class as the manufacturers of motors and wireless sets? Can the country allow to pass unchallenged Sir Edgar Sanders's statement that "we want to get the beer-drinking habit instilled into thousands, almost millions of young men who do not at present know the taste of beer." "There are," he says, "plenty of footballers, plenty of cricketers, plenty of prizefighters, and so on who would like to appear in the press saying that their strength is derived from beer—at any rate, we should consider this in connexion with our scheme." The country should consider it too. The trade is licensed, partly for purposes of revenue, and partly because it deals with something which is a source of potential danger to certain individuals and so to the community. Why does Sir Edgar Sanders stop short with the prizefighter? What about the billiard player, the chauffeur, the telegraph operator, the aviator? Is their "strength" too derived from beer? And why should the young women of the country be deprived of the knowledge of the secret of strength and the licensed trade of still larger profits? Perhaps these untilled fields will come under cultivation when the £250,000 allotted for the present advertising campaign have been exhausted.

That alcohol is of value to the citizen was recently the subject of an unsatisfactory debate at the Hunterian Society, unsatisfactory not because of the absence of any conclusion but because no attempt was made to define what was meant by alcohol, value, or citizen. It appears to us an undoubted fact that alcohol in certain percentages makes social intercourse easier for certain people, adds to the amenities of life, and creates a feeling of well-being without detracting from their general health. It is equally obvious that for other citizens even a smaller percentage of alcohol may cause them to be not only a general nuisance but a danger to society. While the action of alcohol on the individual, and his reactions to it, are not predictable, there is a real disadvantage to the community in all advertising campaigns whose aim is to increase the general consumption of alcohol. We believe that the moderate drinker has no desire to convert the teetotaller, provided the teetotaller allows him a measure of liberty; and it seems to us that the brewers by their campaign of publicity are only bringing the day nearer when by the adoption of Government control along the lines of the Carlisle experiment the incentive of private profit will be abolished.

AIR AMBULANCES

At the United Services section of the Royal Society of Medicine on Monday last, Colonel E. M. Cowell, F.R.C.S., told what had been done to facilitate air transport of injured and sick persons. Air ambulance detachments under the British Red Cross having been sanctioned by the Air Ministry, several flying clubs had taken the matter up; these would, he thought, not be without their use in war, manned by women and pilots too old for fighting. He showed slides of several types of ambulance plane which had been officially approved. The French had evacuated more than 4000 casualties in Morocco by air, and civil aviation was carrying sick and wounded persons in the U.S.A., Sweden, and Australia. Subsequent speakers noted that casualties were evacuated by air in Somaliland in 1919, and that even earlier than that aeroplanes were used to bring victims of air crashes from outlying aerodromes to the R.A.F. Hospital at Halton. In ten years 1400 casualties had been carried by air in the East. The general service machine and stretcher should, it was said, be used whenever possible. In the new mechanised army, on the field, it may be difficult to collect casualties except by air, for battles will take divisions over 100 miles in a day. Air evacuation would have been useful in the South African war, where the motor ambulance might have been defeated by the drifts; also in mountain warfare, when small machines are able to land in small areas, possibly with the help of the autogiro. In the desert an aeroplane can do in two or three hours what would take a convoy of camels a week. Colonel Cowell received the thanks of the section for his own work in organising civil air ambulances.

British Cottage Hospital, Algiers.—There is a danger of this hospital having to close its doors, its resources having been seriously affected by the economic depression and the fall in the number of winter visitors to Algiers. The hospital, which has been in existence for nearly 40 years, and has of late been much improved, gives good service to the local British and American communities and to sailors. An appeal for support is being made.

ANNOTATIONS

BART.'S AT CHARTERHOUSE

THE Prince of Wales, in his dual capacity of president of the hospital and perpetual student of the college, paid a visit last Friday afternoon to Charterhouse-square, where the Medical College of St. Bartholomew's Hospital is now taking shape. The Prince was received at the entrance gate by the Lord Mayor of London and the Vice-Chancellor of London University, accompanied by office bearers of the hospital and college, and afterwards took tea with more than 200 old Bart.'s men in the great hall of Charterhouse, where he was received by the senior physician and the senior surgeon of the hospital, and by the warden of the college. Although medicine and surgery have been taught within the walls of the hospital for 400 years or so, it was not until 1830 that the college was founded by Abernethy and his colleagues as a corporate body, and not until 1921 that it acquired its own charter. Last year more than 900 part- and whole-time students attended courses conducted by 120 teachers, not including a large staff of technicians and others. Squads of students of various years were stationed in the quadrangle to welcome the Prince. The buildings, however, will require remodelling before the departments of physics, chemistry, anatomy, and physiology can move into them; the students are already gainers by possession of a gymnasium and of abundant space for outdoor recreation. Of the £81,000 required to pay off the deficit on the purchase money and to make the necessary alterations in the buildings, £26,000 has already been subscribed by past and present Bart.'s men. It is understood that the Prince suggested to the Lord Mayor that the City might now make an appeal for the remainder of the money.

MEDIAN NERVE INJURY IN FRACTURES OF THE WRIST

THE observations of Abbott and Saunders[1] suggest that the involvement of the median nerve in fractures of the lower end of the radius may be a much more important complication than is generally supposed. The nerve is very rarely injured directly at the time of the accident; indeed they have been able to find only two records of this happening. The important lesion is a secondary neuritis resulting from pressure on the nerve by surrounding structures. Such pressure can be caused by an unreduced, or incompletely reduced, bony fragment, or by callus. Evidence of involvement of the nerve can usually be detected in these cases during the course of treatment, although in one case to which Abbott and Saunders refer the symptoms of median nerve neuritis first appeared ten years after the imperfect reduction of a Colles's fracture. The type of median nerve injury to which these writers wish to draw particular attention is, however, a direct result of treatment. The position of acute palmar flexion has become popular of late years in the splinting of cases of Colles's fracture and of backward displacement of the lower radial epiphysis. It is said to be especially effective in retaining the reduced position. It now becomes apparent that the position of acute flexion exposes the median nerve to a dangerous degree of pressure, which, if persisted in for several weeks, may lead to severe crippling of the fingers. Six such cases are reported, in one of which the median nerve was so severely damaged within a week that a subsequent neurolysis became necessary. The danger signals in these cases were severe pain in the hand and fingers and numbness of the thumb and index-fingers, occasionally also of the middle finger. Examination of the hand revealed anæsthesia, or hyperæsthesia, of the area of median nerve distribution. According to Abbott and Saunders, the damage is caused by nipping of the nerve between the upper edge of the transverse carpal ligament and the lower end of the radius. In the position of acute flexion the transverse carpal ligament is rendered quite tense—an observation readily verified in the dissecting-room. This tension is another factor in pinching the nerve against the radius, and in cases of incomplete reduction the danger is obvious. It is an indefensible practice to employ the position of acute flexion to overcome the deformity of an imperfectly reduced fracture of the lower end of the radius by gradual angulation. The time when one is most tempted to employ it is after the operation of osteotomy for correction of gross deformity resulting from an old Colles's fracture, because, owing to the absence of impaction, there is a strong tendency to the recurrence of the deformity. It is just in these cases, however, that the danger of median nerve neuritis is particularly to be feared. There is possibly a degree of backward slipping of the lower fragment, undetected at the time, during the application of the splint. Extreme caution is enjoined by Abbott and Saunders in the use of acute flexion in all cases, but especially after osteotomy of the lower end of the radius. They also advise examination for median nerve involvement before reduction is attempted. Many of the cases of stiffness of the fingers and of trophic disturbances of the joints of the wrist and fingers after Colles's fracture could, they believe, be traced to injury to the sympathetic fibres carried in the median nerve.

PAROXYSMAL HYPERTENSION

PAROXYSMAL attacks of vasomotor spasm, with great rise of blood pressure, are characteristic of the rare adrenal tumour known as a paraganglionoma, of which an example is described by J. M. Planteydt.[1] Tumours of the suprarenal medulla are divisible into neuroblastoma (malignant), ganglioneuroma, and paraganglionoma. It is the third type of tumour, composed of chromaffin cells and presumably associated with hyperadrenalinæmia, which causes the clinical picture in question. In Planteydt's case the patient, a fisherman aged 28, had suffered for 18 months from attacks of tightness in the chest and palpitation, increasing in severity until he was obliged to give up his work. Physical examination revealed nothing abnormal except an accentuated aortic second sound. Radiography of the heart showed an enlarged left ventricle; of the kidneys, that the right upper pole could not be defined; but apart from this there was no abnormality. While under observation the patient had a number of "hypertensive crises" in which he felt very ill, complaining of substernal oppression and occasionally of pain in the chest. The face became very pale and cyanotic, the extremities cold, the pulse small and rapid, while the blood pressure was found to be extremely high. In one such attack the pressure was 310/150; about an hour later profuse sweating began, and the pressure gradually fell to 134/110.

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[1] Abbott Le Roy, C., and Saunders, J. B. de C. M.: Surg., Gyn., and Obst., October, 1933, p. 507.

[1] Nederl. tijdsch. v. geneesk., 1933, lxxvii., 4774.

attacks usually lasted from a few minutes to an hour. Despite medical and X ray treatment, became more severe, and as there were signs of ired renal function, it was decided to operate. iew of the X ray findings the right kidney was ored through an anterior incision, the peritoneum pushed aside, and an encapsulated tumour, size of a fist, was removed from the upper pole. ologically it was composed of large cells set tly on the capillary endothelium, many contain- chromaffin matter. After operation the blood sure fell to a very low level, and adrenaline was n for two days, after which the manometer ling was 125/95, at which it remained constant. months later the patient was back at work, ing quite well, the urine was normal and the d pressure 115/80. Planteydt states that only e other cases of successful removal of an adrenal aganglionoma have been published. He urges ration in any case in which the renal function ws signs of impairment despite medical and ray treatment, since the patient will otherwise, ner or later, fall a victim to renal failure.

BENZEDRINE IN RHINOLOGY

NEW drug has recently been introduced into nology under the name of benzedrine. It is a thetically prepared compound, the carbonate benzyl-methyl-carbinamine, which is described a racemic mixture of bases having the formula $H_5CH_2{\cdot}CH{\cdot}NH_2{\cdot}CH_3$. Both the base and its carbonate volatile, and may be administered as an inhalation by means of a dropper or spray of a 1 per cent. ution in liquid petrolatum. It is structurally ated to ephedrine and to adrenaline, and has some- at similar pharmacological properties, producing narked rise of blood pressure and a shrinkage of the sal mucosa. Testing it in the out-patient depart- nt of the Boston City Hospital, Dr. Harry V. rne[1] found that it gave definite relief in 18 out of cases of seasonal hay-fever and, to a less pronounced gree, relieved the discomfort of acute coryza, t was of no benefit in chronic hypertrophic rhinitis d chronic sinusitis. He administered it by inhala- n, but does not state what form of inhalation as employed. The results obtained in the treatment hay-fever and acute rhinitis were regarded as couraging, but Dr. Byrne notes that overdosage s been followed by symptoms resembling the fects of cocaine. The usual duration of the action pears to be about four to five hours, and there is mention of deleterious subsequent reactions. he drug appears to be worthy of further trial.

THE MEDICAL DIRECTORY

THE Directory for 1934 contains 527 more names han appeared in the previous volume: that is a rger increment than any since the year 1929. There s also an interesting difference in the incidence of he increase among the seven sections into which he Directory is divided. In all of these, with the ole exception of Ireland, there has been an increase f names this year—small, it is true, in the case of Vales, Scotland, Abroad, and Services, but significant, s it is a reversal of the recent tendency to fall. n the Provinces there is as usual a large increase, his year by 362 names, but the London list has only 3 names extra to its credit. The Directory itself s nearly 30 pages longer, but happily the volume has not increased in size; it is, in fact, a little more compact, evidently by reason of the omission of the section on British Spas and Seaside Resorts, whose place is now taken by the official handbook of the British Health Resorts Association. We cannot help, however, giving expression to a regret that the publishers have not acceded to the request, recently voiced by Dr. John Fawcett in our own columns, to insert again in the Directory the list of dental surgeons, discontinued in 1925, which is available nowhere else. As Dr. Fawcett pointed out, neither the Medical Register nor the Dentists Register fulfils the requirements, and the lack of a combined medical and dental directory may be a hindrance and an inconvenience to doctors in their work. Of this we have since received independent testimony. In all sections of the Directory there are the usual corrections and emendations which make the volume indispensable as a work of reference to many groups of persons within the medical profession or closely connected with it. The list of special hospitals in the London section continues to gain in detail, but some will miss the names of assistant medical officers from the general hospitals division of the London County Council. The Directory is published by Messrs. J. and A. Churchill, and the price remains unchanged at 36s.

PSYCHO-ANALYTICAL THERAPY

PSYCHO-ANALYTICAL conceptions have had considerable influence on human thought and offer what some believe to be the only intelligent approach to many psychiatric problems. Clinicians, whilst admitting the influence of psycho-analysis, are nevertheless obliged to weigh therapeutic possibilities and will appreciate the mode of approach taken by Dr. Leo Kessel and Dr. H. T. Hyman in a study entitled The Value of Psycho-analysis as a Therapeutic Procedure.[1] Thirty-three patients of these two physicians had been subjected to a more or less complete course at the hands of competent medical analysts, and the results are set out with impartiality. Sixteen cases gave results described as bad. Of these, seven, including one suicide, were manic-depressives or schizophrenics—the writers note that such cases are readily referred to the analyst, who shows an increasing disposition to refuse them for treatment; six were definite failures, and one was made much worse, probably because of a clumsy analysis; three were counted as failures since they sought analysis for marital difficulties ultimately solved by divorce. The 17 good results comprised four patients who were "relieved of symptoms by analysis plus sexual liberation" and we may agree that it is impossible to classify them as therapeutic triumphs of a specific method; in five patients the results were "specific and gratifying beyond measure," and the writers believe that they could have been obtained in no other way than by analysis; five were helped but not wholly relieved; three adolescents with behaviour problems were relieved by analysts without a formal psycho-analysis, and it is suggested that any simple advice would have been equally successful. The patients in whom good results were obtained were those with anxiety and compulsive states, and visceral symptoms of a functional nature. Many of these types can be handled by less arduous and expensive therapy, but the writers make the point that they did not refer such patients to the analyst until driven to that procedure; hence, they say, a good result is a specific triumph for the analytic method.

Now that the pioneer stage of psycho-analysis is over, such a study of therapeutic possibilities is timely. The need to spend up to five hours a week, for a period that may run to a year or more, makes analysis a procedure not lightly to be undertaken; for what is only moderate remuneration for the analyst may be a heavy financial burden for the patient, though against that may be set the possibility of treatment without interference with the patient's daily routine. The practical conclusions seem to be that not much can be hoped for in the treatment of the major psychoses—though psycho-analysts may feel justified in persevering with early or mild cases under suitable circumstances, for they must be credited with as much courage as (say) our pioneer surgeons. In the field of the minor psychoses and where psychological disturbances show themselves in somatic disorders—and it is these that make up so many of the problems of general practice—we can look forward to the continued spread of psychological knowledge that will enable the practitioner to deal with some of them; others may benefit from more specific treatment according to the bent of the psychotherapist; and for a residue the combination of need and opportunity will justify recourse to a complete analysis in the hope of restoration to health, happiness, and efficiency.

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[1] New Eng. Jour. Med., Nov. 23rd, 1933, p. 1048.

[1] Jour. Amer. Med. Assoc., Nov. 18th, p. 1612.

THE HOLMGREN WOOL TEST

THE test for colour-blindness by matching skeins of coloured worsted, devised by the Swedish physiologist, A. F. Holmgren (1831–1897), was until recent years the only one known to the medical student. It is now so entirely discredited that the latest text-book for students [1] dismisses it in a single line as "of historical interest only." The history of the abandonment of this test is not only curious but distressing, since its chief opponent, Dr. F. W. Edridge-Green, had to struggle for some 15 years before getting a proper hearing for his views in scientific circles, and for another ten years or so before seeing them so far prevail as to eliminate accidents due to defective colour vision whether on land or sea—so far, that is, as this can be effected by Governmental regulation. The story is related in a little book [2] published by Dr. Edridge-Green himself, in which he attributes the long delay in the recognition of his work to the Royal Society and especially to what he calls "the Cambridge element" in its decisions. His tone will certainly be blamed by his former opponents and others as egotistical—the author admits himself in the preface that the book cannot do him any good—but it is not easy to foresee how his accusations can be refuted. The history of the matter is shortly this.

In 1889 Dr. Edridge-Green took his M.D. degree at Durham, and was awarded the gold medal for a thesis on colour-blindness. Shortly after, a paper of his was communicated to the Royal Society by Sir Lauder Brunton, and he was appointed a member of the International Code of Signals Committee. Meantime the subject was taken up by the Board of Trade, who suggested his name to the Royal Society for inclusion in a committee on colour-blindness to which the whole subject was to be referred. That body did not follow the suggestion and issued a report unanimously recommending the Holmgren test for adoption by railway companies, shipowners, and the Board itself. The view of Dr. Edridge-Green, who had just then published a book on the subject,[3] was ignored. The permanent appointment as adviser to the Board of Trade, which had been promised to Dr. Edridge-Green if he could make good his views on the unfitness of the wool test, was given to one of his opponents. He however persisted in the struggle and in 1903, on the initiative of the late Mr. Devereux Marshall, a committee of the Ophthalmological Society was appointed to investigate the matter afresh. This committee issued a preliminary report [4] in which Dr. Edridge-Green's contention that some cases of colour-blindness cannot be detected by Holmgren's test, however skilfully used, was fully confirmed.

On the strength of this report Dr. Edridge-Green went to Cambridge, as a research student at his own expense, to obtain further evidence as to the facts. His reception there was chilly, and his thesis was rejected with the remark that he had done nothing original in colour-blindness. On the other hand, many authorities at Oxford, including the late Mr. Doyne and the late Prof. Gotch, took some trouble to confirm his facts. After 1910 opinion on the subject changed rapidly. In 1911 Dr. Edridge-Green was appointed Hunterian professor of the Royal College of Surgeons, and a committee of the British Association, appointed in 1912, reported in his favour. Questions in Parliament were put and finally, in 1915, the wool test was completely abandoned by the Board of Trade, and a lantern based on Dr. Edridge-Green's principles was adopted. Five years later he was given the official appointment, as special examiner and adviser to the Board, which the opposition of the Royal Society had debarred him from obtaining 20 years before. All this—and much more—may be read in Dr. Edridge-Green's manifesto, in which is also included a restatement of his theories about the function of the retinal rods and of the visual purple, which are essentially at variance with those now generally held. Whether or not these views find more support with physiologists in the future does not affect Dr. Edridge-Green's claim that after many years' struggle he succeeded in replacing an inefficient by an efficient test for colour-blindness. A director-general of the Naval Medical Service wrote in 1920: "Dr. Edridge-Green has deserved well of his country. He has given us the means of averting appalling disasters by eliminating the colour-blind from control of vessels and fleets at sea."

PLEOMORPHIC BACTERIA

THE traditional and conventional view that has prevailed during this century has been that bacteria are organisms of a standard and fairly uniform morphology which multiply by simple fission and have no complicated life-histories. Descriptions of any considerable degree of pleomorphism have always been regarded with suspicion and have been generally attributed—in many instances correctly—to bad technique and impure cultures. A similar scepticism has met the arguments of those who have described developmental and reproductive cycles, though the cumulative evidence has strengthened that some apparently simple bacteria may go through manœuvres resembling some kind of sexual reproduction. In the current number of the *Journal of Pathology and Bacteriology* Prof. J. C. G. Ledingham describes some impressive observations on the morphology of the organism of pleuro-pneumonia. This organism is mostly regarded as on the verge of being a virus, on the grounds that infective material would pass through porcelain filters; though it was well known that some phases of it were plainly visible, both individually under the microscope and en masse in cultures. According to Prof. Ledingham's description and some excellent figures, the microbe in its simplest form consists of a minute filtrable chromatic corpuscle from which mycelial-like filaments emerge. The protoplasm of these threads has the power to develop further chromatic nodes from which again moniliform growth proceeds, and in this way complicated structures may arise which have a remarkable resemblance to minute actinomycotic colonies. At some stages a thick sheath surrounds some of these elements, and the whole picture presents an extraordinary diversity of appearances. The systematic rank given to the organism must obviously correspond to its morphology and development, and Prof. Ledingham places it accordingly in the order actinomycetales, leaving its precise position therein to be determined later.

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[1] Mayou's Diseases of the Eye. Ridley and Sorsby, fourth edition, 1933, p. 12.

[2] Science and Pseudo-Science: *the Necessity for an Appeal Board for Science.* London: John Bale Sons and Danielsson. 1933. Pp. 104. Price 2s. 6d.

[3] Colour Blindness. International Scientific Series.

[4] Trans. Ophth. Soc., 1904, xxiv., 367.

HARVEY'S CHURCH

THE tower of Hempstead Church, where Harvey's bones lie, fell down 50 years ago, when the shell containing the great discoverer's remains was moved into a sarcophagus, which was placed in a chapel named the Harvey chapel. A fund was then opened for the restoration of the church, but failed to secure adequate support. In 1923 the Royal College of Physicians of London formed a committee with the object of raising the £5000 necessary for rebuilding the tower, and this year, with some £3000 in hand as a result, the work of rebuilding was started, Lord Dawson of Penn laying the foundation-stone last July. The money received has been expended, and a further £2000 is needed before completion can take place. An appeal has been issued now by Mr. A. W. Ruggles-Brise, D.L., Spains Hall, Finchingfield, Braintree, for subscription to a Hempstead Church Tower Fund, and donations can be sent to him, as hon. treasurer of the Fund, at that address.

FUNCTIONAL UTERINE HÆMORRHAGE

THE pathology of profuse uterine bleeding occurring in the absence of any obvious reason has been the subject of investigation by Dr. A. Lloyd Potter, who described the conclusions he has reached at a meeting of the North of England Obstetrical and Gynæcological Society held at Sheffield on Nov. 24th. He had first repeated the work of Mr. Wilfred Shaw, who had found that the elastic tissue content of the uterus increased after each pregnancy and varied directly with the parity of the patient. The material examined by him provided ample confirmation of this work, and he thought that it could be taken as established that the elastic tissue content of the uterus bore a direct relationship to the parity thereof, and that it was in no way a sign of subinvolution, nor associated with the causation of functional bleeding. He had proceeded to the examination of 165 cases and had found it possible to classify them for the most part into two groups—namely, metropathia hæmorrhagica (34 per cent.), and epimenorrhœa (48 per cent.). In the former group the enlargement of the uterus was due to true hypertrophy of the muscle-fibres and not to an increase in the amount of elastic tissue. The endometrium was thickened and polypoid-formation was common, the microscopic appearance being similar to that of the premenstrual phase. Almost all the available ovaries showed follicular cysts and a singular absence of active luteal tissue. In the epimenorrhœal type the most striking feature found was œdema of the stroma and an increase in the number of thin-walled capillaries in the endometrium. In the ovaries available for examination the general picture pointed to hyperactivity of the follicular mechanism, an increase in the amount of active luteal tissue. In a few cases classified as of the hypomenorrhœal type, the patients complained of excessive loss at infrequent intervals; this group showed no characteristic pathological findings. Another small group included cases of postmenopausal bleeding of functional origin. The hæmorrhage in these cases was attributed by Dr. Lloyd Potter to the continuance of the pituitary action for some little time after the menopause. There remained 8 per cent. of the total number of cases which he was quite unable to classify. In these cases some ovarian or pituitary dysfunction may have been responsible for the altered menstrual cycle.

ENDOTHECAL INJECTIONS

THE exact destination of anæsthetic fluids injected into the spinal canal is a constant source of controversy among anæsthetists. At the anæsthetics section of the Royal Society of Medicine on Dec. 1st Mr. Etherington Wilson made an interesting contribution to the argument, if we cannot admit that he has incontrovertibly solved the problem. His paper dealt solely with percaine and to establish his theories he related, and illustrated by slides, excellent experiments with coloured solutions in glass tubes. These showed the rate of ascent of the injected fluid in various circumstances and how method of injection, temperature, and specific gravity affect this rate. Nevertheless there appeared to be lacking sufficient clinical evidence to prove that the theoretically determined behaviour of the injected solution was actually that which took place in practice on the human subject. Those who discussed the paper appeared to hold the opinion that the reader of it had not convinced them that his technique was more certain in its results than are the methods of spinal injection usually adopted. It remains in fact true that the physics of endothecal injection are still sub judice in spite of the logic and emphasis of Dr. Howard Jones and the experiments of Mr. Wilson

"NOSE-CLOSING" RAYS

Sir Leonard Hill divides the sources of radiant heat into two categories, dark and bright—e.g., dull electric or gas fires on the one hand, and incandescent lamps, modern gas fires or coal fires on the other. He avers that dull sources, directed upon the skin, tend to cause occlusion of the nostrils, and that this produces discomfort in people who already have some partial obstruction, such as a deflected septum; bright sources not only do not produce this effect, but relieve the discomfort from the others. To test this theory A. F. Dufton and T. Bedford have performed carefully controlled experiments which they describe in the November issue of the *Journal of Hygiene* (p. 476). Acting on the assumption that congestion of the nasal mucosa should render inspiration more forcible, they have taken records of inspiratory pressures from one nostril under varying conditions. The principal subjects of the experiment were 30 blind men from St. Dunstan's, and 45 other people fitted with opaque goggles. The temperature and humidity of the room were kept constant, and other factors, such as daylight and movement of air, excluded or controlled. The subjects were exposed to one or other of two electric fires, respectively bright and dull, each of which had precisely the same heating power. These fires could be silently interchanged at the will of the experimenter and without the knowledge of the subject. The results of the experiments are stated to have been invariable—namely, that there was no change in the inspiratory pressure when one fire was substituted for the other. This was confirmed by statistical analysis of the pressures recorded. A comparison of inspiratory pressures before and during exposure to various sources of radiant heat led to the conclusion that dull and bright sources acted equally as "nose-closers"; even sunlight had this effect. Moreover, it is stated that a sudden warming of the air of the room (by other than radiant heat) produced nose-closing in a partially stripped subject, as did the application of a fomentation to the arm. Immediate relief was obtained in all cases by the screening or removal of the source of heat. Temporary relief was afforded by sponging any part of the body, whether exposed to the heat or not, with cold water. No relief was given by any source of incandescent heat or light, nor by placing a trough of water in front of a dull source.

Dufton and Bedford thus differ from Sir Leonard Hill, not only on the effects of various forms of infra-red radiation, but also on the measures necessary to neutralise them. It is quite possible, as Hill points out, that infra-red rays of different wave-lengths may have different physiological actions, but the purely objective experiments of Dufton and Bedford seem to show that the nasal mucosa is not a satisfactory index of these, if they exist at all. There can be no doubt about the importance of excluding the possibility of suggestion in investigating any reflexes involving the nose; to a person suffering from hay-fever the mere mention of his complaint is often enough to start the eyes and nose streaming, during an otherwise quiescent interval. The reflex curtailment of the nasal blood-supply on chilling any part of the skin is already well known, and has been invoked to explain many common infections. The observations just recorded seem to show that the converse is also true; the authors are careful to point out that such nasal congestion as is produced is unlikely to be attended with discomfort on the part of a normal person, especially if the rise of temperature is slow.

THE WARNING SIGNS OF ECLAMPSIA

One of the advantages of the antenatal clinic is that it provides excellent opportunities for studying the clinical manifestations of the pre-eclamptic toxæmia of pregnancy in its earliest stages. The three cardinal signs of this particular "toxæmia," when fully developed, are œdema, albuminuria, and hypertension. Apart from the generally recognised fact that œdema not infrequently precedes albuminuria, little is known about the order of appearance of the three signs or about their relationship to one another. A paper by Prof. F. J. Browne[1] provides useful information on these matters. In order to detect the earliest signs of abnormality Prof. Browne has been compelled to adopt strict criteria. He has accepted, for instance, a rise in blood pressure of a few millimetres above the normal limit of 130/70 as evidence of hypertension. This explains the high incidence of pre-eclamptic toxæmia in his clinic at University College Hospital—320 cases in a series of 1674 pregnancies. His results tend to show that in different cases the three signs may appear and disappear independently of one another, and only occasionally bear close comparison. None of the signs can therefore be regarded as a consequence of either of the others and, whatever the cause of the condition may be, it is evidently capable of eliciting each sign separately. In some patients œdema appears first, in others albuminuria, and in a considerable number hypertension. What then is the best single criterion of early toxæmia? Clearly not œdema, for much water must be retained before pitting can be demonstrated. Albuminuria is equally deceptive, for it may be the last sign to appear. Browne concludes that the routine estimation of blood pressure is, on the whole, the most sensitive test. It is refreshing to read that he resists the temptation to conclude that the fall in hypertension which occurred in many cases was due to advice received at the clinic. Many and diverse remedies are employed in treating pre-eclamptic toxæmia—for instance, alkalis, calcium preparations, low proteins diets, salt-poor diets, fluids in excess, and fluid restriction. Some of them are used empirically; the use of others is based on hypotheses. The advocates of all are apt to forget that rest in bed will often work wonders.

PRESYSTOLIC MURMUR AFTER CORONARY OCCLUSION

The occurrence of a transient diastolic murmur in two patients recovering from coronary occlusion is reported by Wolferth, Wood, and Margolies.[1] These murmurs became audible at the tricuspid area—that is, to the right of the lower part of the sternum—about a fortnight after the onset of the attack, and were situated in the presystolic portion of the cardiac cycle. In one case the time relations of the murmur were so altered with the occurrence of partial heart-block and paroxysms of auricular fibrillation, as to make it certain that the murmur was related to auricular systole. In quality it was unusual, being high pitched and blowing, and thus contrasting with the murmurs of mitral and tricuspid stenosis. Electrocardiograms in both cases suggested that the infarct involved the anterior wall of the left ventricle. The mechanism of production of the murmur is not clear, and the authors of the paper can only suggest possibilities, such as œdema of the tissues near the tricuspid valve, thinning and bulging of the septum into the right ventricle, and a thrombus placed so as to interfere with the opening of the tricuspid valve. As both the patients recovered, no pathological evidence was obtained. However, Wolferth and his colleagues report having seen bulging and thinning of the anterior part of the intraventricular septum in many specimens with infarction of the anterior wall of the left ventricle, but never thrombi under the tricuspid leaflets with infarction in this area.

THE PREVENTIVE ASPECTS OF MEDICINE

We have been compelled to hold over until next week the next lecture in this series. The series will be continued until the holiday break occurs, after which publication will be resumed.

We regret to announce the death on Monday last of Sir William Whitla, doyen of the medical profession in Ulster and a world-wide authority on materia medica. Sir William, who was in his 83rd year, was hon. physician to the King in Ireland and pro-vice-chancellor of Queen's University, Belfast, which he represented in the British Parliament from 1918 to 1923.

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[1] Jour. Obst. and Gyn. Brit. Emp., December, 1933, p. 1160.

[1] Wolferth, C. C., Wood, F. C., and Margolies, A.: Amer. Jour. Med. Sci., October, 1933, p. 496.

SPECIAL ARTICLES

GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV. 28TH–DEC. 2ND, 1933

(Concluded from p. 1335)

Instruction in Tuberculosis

SINCE the last session the Education Committee have asked all licensing bodies whether they are satisfied that their candidates for the final examinations have received sufficient opportunity to study tuberculosis in its early stages and adequate instruction in its differential diagnosis. Prof. J. B. LEATHES reported that the replies indicate in every case that the licensing body was fully satisfied upon both these points.

Dr. L. P. GAMGEE protested that in Birmingham there were not sufficient opportunities for studying tuberculosis in the early stages. Sir GEORGE NEWMAN agreed, saying that he also had been surprised that every licensing body which had replied was fully satisfied. The Ministry, he said, had been receiving for some months complaints from tuberculosis officers in various parts of the country of the unsatisfactory reports of cases which they were receiving from private practitioners. Complaints were also received from the medical schools that the various public services of the Ministry of Health were making it difficult for them to present early cases to their students, a difficulty which he had apprehended for many years and in which he had never thought that there was any definite sign of improvement. Nevertheless, if this was the considered opinion of the committee he would be glad, for he would be able to use it in his rejoinders to these officers' complaints.

Prof. LEATHES said he had been surprised himself that the answers of the licensing bodies had been favourable. Important bodies had, however, not replied, and their answers might corroborate Sir George Newman's impression.

Sir LESLIE MACKENZIE remarked that unless adequate use was being made of public sanatoriums, dispensaries, and institutions, students could not be said to be receiving adequate information on tuberculosis.

Dr. E. K. LE FLEMING observed that the whole question was intimately linked up with preventive medicine, and he hoped that it would come before the Council in that relationship at a later date.

Dr. LETHEBY TIDY pointed out that it was not necessary to have the same early case under observation for a prolonged time. The reply from the London Hospital had been favourable, but some of Sir George Newman's communications had come from tuberculosis officers who had dealt with students trained in that hospital.

The committee was asked to report again when they had heard from the eight bodies who had not yet replied.

South African Public Health Diploma

Sir GEORGE NEWMAN introduced the report of the Public Health Committee, which contained a statement by the legal advisers of the General Medical Council on the diplomas in public health of South African universities. In December, 1931, the South African Medical Council had written to the G.M.C. about the inability of the latter to recognise these diplomas, and asking whether, if a Medical Bill were introduced into Parliament, it would probably include power to recognise them provided that the standards were satisfactory. The Registrar had replied in May, 1932, expressing the Council's regret that it could not recommend giving the Dominions power to grant registrable diplomas in public health. Differences in governmental systems and social services were so fundamental that the training under one system could not readily be made equivalent to the training under the other. The matter was discussed at an international congress held at Cape Town under the auspices of the League of Nations, when Sir George Buchanan, for the Ministry of Health, had communicated with the Council which had then sought legal advice. Diplomas of public health granted by British licensing bodies, it was pointed out, were registrable under the Medical Act of 1886, and although colonial practitioners could be registered in virtue of a degree guaranteeing their proficiency in medicine, surgery, and midwifery, this provision did not apply to diplomas of public health. Moreover, a doctor who obtains a British D.P.H. can only have it registered if he is already on the register. In order to make overseas public health diplomas registrable in this country it would be necessary for Parliament to amend Section 21 of the Act by inserting after "granted by any college or faculty . . . in the United Kingdom" the words "or any British possession to which Part II. of this Act applies." The committee recommended the Council to approach the Privy Council with a view to the introduction of amending legislation on the lines suggested by the legal advisers, and the Council adopted the recommendation.

Other Committee Business

The Education Committee proposed the revision of the Council's resolution on the standard of chemistry and physics to be required of students before entry on the medical curriculum. The new draft includes an additional resolution providing that the knowledge of elementary chemistry and elementary physics required before entrance upon the medical curriculum proper should be supplemented during the first or second year, or both, by further instruction and examination in these subjects adapted to the special needs of the medical student and coördinated with the teaching in the later stages of the curriculum.

Sir HENRY DALE, introducing the report of the Pharmacopœia Committee, said that the number of copies of the British Pharmacopœia, 1932, sold since May 18th, was 3334, and the total number of copies sold to date was over 33,000. The Pharmacopœia Commission have reported to the committee that they have under consideration a proposal for an addendum to the new Pharmacopœia, which shall include any necessary changes in standards, and monographs on such new drugs as may be considered suitable for official description. Research into pharmacopœial problems continues, and work has been commenced at the new laboratory at the office of the G.M.C. The Commission has relinquished the accommodation which has been put at their disposal during the last four years by the generosity of the Pharmaceutical Society.

Penal Cases

CHARGES OF CANVASSING

The Case of Steven Tait Pottinger, registered as of Lyndhurst, Willenhall, Staffs, M.B., Ch.B. 1925, U.Edin., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have canvassed patients of Thomas Maitland Crawford and Armin Frank Maximilian Fuoss and other patients as mentioned below, with a view to inducing such patients to become patients of yours. In particular: (1) In or about the month of January, 1933, you canvassed one Levi Day, who and whose family were patients of the said Thomas Maitland Crawford, and subsequently without his knowledge or consent obtained possession of his medical card and signed or caused to be signed an intimation to the Insurance Committee of his desire to change his doctor, and subsequently signed the transfer slip. (2) In the early part of 1933 you canvassed one Eli Day, brother of the said Levi Day and a patient of the said Thomas Maitland Crawford, and without his knowledge or consent obtained possession of his medical card and signed or caused to be signed an intimation to the Insurance Committee of his desire to change his doctor and subsequently signed the transfer slip. (3) In or about the month of January, 1933, you canvassed one Mrs. Alice Cattell, a daughter-in-law of Mrs. Levi Day, and endeavoured to obtain from her the medical cards of her husband and the rest of Mrs. Day's children, who were patients of the said Thomas Maitland Crawford. (4) In or about the month of January, 1933, you canvassed one Mrs. Martha Gibbons with a view to the transfer of her husband Richard William Gibbons, and of her daughter Hilda Gibbons; from the list of the said Armin Frank Maximilian Fuoss to your own list. (5) Early in 1932 you canvassed one Mrs. Harriet Loftus and endeavoured to obtain from her the medical cards of her family with a view to their being transferred from the list of Dr. Tonks, then recently deceased, to your own list. (6) Early in 1932 you canvassed one Mrs. Lucy Marion Talbot with a view to the transfer of her husband Henry Victor Talbot to your own list. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainants were the Medical Defence Union.

Mr. Pottinger appeared accompanied by Mr. Thomas Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society. Mr. Oswald Hempson, solicitor, prosecuting on behalf of the Medical Defence Union, explained the method of transferring patients from the panel of one doctor to that of another. Mrs. Levi Day, he said, had been taken ill, and Dr. Pottinger had been sent for. He had pronounced her seriously ill, and said that treatment would cost 30*s.* a week, but that if her ten children would transfer to his panel he would treat her for 10*s.* a week. On subsequent occasions he had approached other members of the family and asked them for their panel cards, repeating this offer. He had actually searched the house for panel cards. Protests had been made when he had searched in various cupboards and chests of drawers. He had tried to open a bureau in the front room and found it locked. In spite of a protest from Mrs. Stringer, one of Mrs. Day's daughters, he had opened a drawer and had taken out several panel cards, put them in his pocket, and left the house. These were the cards of Mrs. Day's husband, his brother, and another daughter, Mrs. Fleming. The cards had subsequently come back from the insurance committee, and on the advice of Dr. T. M. Crawford, on whose panel these persons had been, the two brothers had written saying that they did not wish to transfer. The slips had been already signed by Mr. Pottinger, although in the ordinary way the new doctor did not sign them until the insured person took them to him. Mr. Hempson described the letter received by the Insurance Committee with the cards as a very cleverly prepared document. The letter itself was in one hand and the signatures were obviously in a less educated hand. It was impossible, he said, to imagine a more palpable attempt to deceive. If the facts which he was bringing before the Council were accepted, the letter was clearly a forgery.

Mr. Hempson called Dr. Crawford, who confirmed his statutory declaration, stating that he had at first been on friendly terms with Mr. Pottinger until January of the present year, when he had happened to meet on his rounds Mrs. Harriet Stringer, a daughter of Mr. Levi Day, and a member of one of his medical clubs. She had told him of the transaction concerning the panel cards of her father and uncle. He had made inquiries himself, and had informed the brothers that if they wished to remain on his list they must write to the Insurance Committee saying that they did not wish to transfer.

Mrs. Stringer testified to her statutory declaration and to the facts which Mr. Hempson had put forward.

Mr. Levi Day said that he had not been present at Mr. Pottinger's first visit, but on other occasions Mr. Pottinger had asked him where his panel card was and those of his relatives and children, so that he could have them transferred to his list. On one occasion as witness had been leaving his wife's bedroom Mr. Pottinger had pulled him back and asked him the ages and number of his children. He had said that if all the ten would come on to his panel he would treat Mrs. Day for 10*s.* a week, but that otherwise he would not treat her. On another occasion he had come into the back kitchen and had taken up a bundle of cards from a shelf. Witness had told him that these were not panel cards and had been very annoyed, and asked him to leave them alone. He had seen Mr. Pottinger look through papers in various parts of the house and told him that he had no business to do so. Mr. Pottinger had spoken to him in "The Bridge" public-house, but witness had not said that respondent was the best doctor in the district and that he and his family were going on to his panel.

Mrs. Alice Cattell said that Mr. Pottinger had frequently asked her for her husband's card and those of Mrs. Day's children.

Mrs. Martha Gibbons said that she had called in Mr. Pottinger because Dr. Fuoss had not been at home and her child had been seriously ill. Respondent had said that it was not fair for him to treat the child unless he had the family on his panel. He had picked up her daughter's card and put it in his pocket. He had asked about her husband's card, and when she had told him it was lost he had told her to fill up a form for another. She had done this and given the form to the respondent. The card had been sent and soon afterwards, seeing it behind the clock, respondent had taken it away with him.

Mrs. Marion Talbot testified that respondent had asked her whether her husband would come on to his panel.

Mrs. Harriet Loftus said that on several occasions respondent had asked her for the panel cards of her family. She had told him that this was a matter for them, but he had pressed her to try to persuade them. On one occasion he had taken her by the shoulders and shaken her, and she had since been much annoyed with him.

Mr. Pottinger, giving evidence on his own behalf, said that he had bought his practice in 1930 and the numbers of his panel patients had increased steadily ever since. On Jan. 7th he had received instructions to go to see Mrs. Day, and had arrived at her house between 8 and 9 P.M. He had found three or four women outside, amongst whom was Mrs. Stringer, and had asked them whether the house was Mrs. Day's and who her own doctor was. They had replied that Dr. Crawford was her regular doctor but that she preferred the respondent. They had asked him his charges, and he had replied that these were 3*s*. 6*d*. a visit but less on a weekly basis; he had offered to attend Mrs. Day for 10*s*. a week. Mrs. Day had been very ill with bronchitis. He had asked if she were on the panel, because if so he would not have had to supply the medicine. He had made no offer of a reduced charge in return for the panel cards of the family. After the first fortnight he had been paid £1; he had never asked for 30*s*. He had seen Mr. Levi Day in the patient's bedroom two days later and had asked him how many children Mrs. Day had had and other details of her personal history to assist him in treating her case. He had met the two Day brothers drinking, and one of them had told him that their mother was very much better, that he was the finest doctor in the district, and that they both wished to transfer to his panel. He had never hunted any house for cards, but had helped Mrs. Stringer to find them after she had opened the drawer. Mrs. Fleming had left her card in Mrs. Day's bedroom for him to take. The letter and signatures had been written by his wife, who acted as his secretary. She was in the habit of writing larger when she signed her name. He had had the letter written at his home because it was difficult to get paper in a cottage and took time; he had thought he was doing absolutely nothing wrong, though he now realised that he had been an utter fool. The Stafford Insurance Committee had accepted the cards; it was quite customary for the cards to be sent in with no signature but the doctor's. He had never looked through any papers in Mrs. Day's house or asked Mrs. Cattell for any panel cards at all. He had not known that she had any children. He could not remember all his panel patients. The baby at Mrs. Gibbons's had had an abscess in the chest and he had treated it in the kitchen; it had made a remarkable recovery and in gratitude—so he assumed—Mrs. Gibbons had said that she would give him her daughter Hilda's card and asked him how to get a new one to replace her husband's, which had been lost. Later the child had suffered from necrosis of a rib and he had lost his popularity with the family. He had never asked Mrs. Loftus for panel cards, had never been in her house, and had never shaken her. He had not known that Mrs. Talbot had a husband, as he had attended her parents and had always found her in their house. He had been working 12 hours a day regularly at this time and there had been an epidemic of influenza raging.

Mr. Hempson then cross-examined Dr. Pottinger, who said that he could only explain the accusations as a story made up by the patients because they resented his charges; they were, he said, very easy to offend, and might be annoyed by a change in the tone of one's voice. He had not brought his books with him. He admitted that there was a great difference in the formation of the *D*'s and the *y*'s in the letter sent to the Insurance Committee, and that it was written on a scrap of paper such as might be found in a cottage. It was, he maintained, a half-sheet such as his wife was in the habit of using, and it fitted inside the folded panel card; it had not been selected to suggest that the letter had been written in a cottage.

Mr. Carthew read statutory declarations from six eminent medical men who testified to Dr. Pottinger's high character and honour and found themselves, from their knowledge of him, unable to credit the charges brought against him.

The Council, after deliberation in camera, decided to postpone judgment for a year subject to the usual provisos.

The Case of Harry Rubinstein, registered as of 31, Victoria-street, S.C. Road, Dublin, L., L.M. 1928, R.C.P.Irel., L., L.M. 1928, R.C.S.Irel., who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, you have canvassed former patients of the late George Millar Speers, also a registered medical practitioner, for whom you had acted as *locum tenens* and whose practice had been purchased by Charles Frederick Williamson, a registered medical practitioner (ten instances given). And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Charles Frederick Williamson, L.M.S.S.A. Lond., 1931.

Respondent appeared accompanied by Mr. M. Clarkson, counsel, instructed by Messrs. Cohen and Cowen, solicitors.

Mr. Williamson, examined by Mr. Hempson, said that he was 25 years of age, that this was his first venture into practice, and that he had bought the practice for £1500 through a firm of medical agents. He had arrived at an estimate of its value on a record of private patients and of the weekly receipts of the practice shown him by Mr. Rubinstein. He had paid Mr. Rubinstein, through Mrs. Speers, his fee up to Jan. 23rd, but on the 19th Mr. Rubinstein had not come to evening surgery. The records which he had been shown were then not available, and in spite of diligent search he had been unable to find them about the premises. There had been no information to show which patients ought to be visited or were attending at the surgery. On the morning of Jan. 20th Mr. Rubinstein had attended the surgery and witness had asked him for the records, but he had declined to answer any of his questions or to give him any information. He had received complaints from patients that they had not been visited. Witness had made up a visiting list by going through all the panel cards. On Feb. 24th one of the patients of the practice had informed him that Mr. Rubinstein had called on him and told him that he had started in practice in Charles-road, and suggested that he should transfer to his panel. This the patient had done, and complainant had since discovered that several other patients told the same story.

Mr. Hempson put in a number of transfer notification slips sent by the Insurance Committee in respect of patients of the practice. The first notice from Dr. Speers's list was dated Jan. 24th and the last Feb. 2nd. The first transfer from Mr. Williamson's list was dated Feb. 8th.

Evidence of canvassing was given by three patients.

Mr. Rubinstein gave evidence on his own behalf and was cross-examined by Mr. Hempson.

Mr. Clarkson read statutory declarations from three persons mentioned by the complainant who denied that Mr. Rubinstein had ever canvassed them.

After hearing addresses by Mr. Clarkson and Mr. Hempson, the Council deliberated in camera. When strangers were readmitted the President announced that the Council had found the facts proved and had directed the Registrar to erase the name of Harry Rubinstein from the Medical Registrar.

THE QUESTION OF A COMMISSION.

The Case of Bailey Glemice Dias, registered in the Colonial List as of Cumberland Villa, Grove-terrace, Highgate-road, N.W.5, L.M.S. U. Bombay 1914, L.R.C.P. Edin. 1925, L.R.C.S. Edin. 1925, L.R.F.P.S. Glasg. 1925, who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner: (*a*) You attempted to obtain from one, P. W. Norman, an optician, a percentage or commission for yourself in respect of bills for £3 2*s.* and £1 2*s.* 9*d.* respectively of the said P. W. Norman rendered to Miss S. J. Jarvis, a patient of yours, for glasses. (*b*) You attempted to obtain from one, P. W. Norman, an optician, a percentage or commission for yourself in respect of a bill of the said P. W. Norman rendered to A. W. Baverstock, a patient of yours, for glasses. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainants were the Joint Council of Qualified Opticians.

Mr. Dias appeared, accompanied by Mr. Hempson, on behalf of the Medical Defence Union, and Mr. J. Scott-Henderson, counsel, instructed by Messrs. Wedlake, Letts and Birds, solicitors, addressed the Council in support of the charges. He called two witnesses and put in letters from Mr. Dias asking for commission.

Mr. Hempson said that Mr. Dias, a native of India, admitted the facts alleged against him. He had been with a firm who had received commission from spectacle-makers. Since he had been in practice on his own he had received commission from chemists, and had not realised that he was not entitled to it from opticians. He had been ignorant that he was doing wrong. His only livelihood was the capitation fees he received in respect of 166 insured patients, and a small income from lodgers.

The President announced that the Council would postpone judgment for a year subject to the usual provisos.

MEDICINE AND THE LAW

Food Poisoning or Influenza?

IN Barclay *v.* Spiers and Pond, Ltd., the plaintiff claimed damages for an illness said to be due to food poisoning at the defendants' restaurant; the defendants said it was gastric influenza. Mr. Barclay described how the lentil soup which he ordered one Monday had an acid taste, and how, before he had consumed half of it, he had a feeling of nausea and a general sensation of fainting and collapse. He was unable to eat the fried sole he had ordered to follow; the feeling of sickness increased, he went back to his office and was obliged to go home, where he was violently sick. He was ill for 11 months and away from work for a year. The defendants gave evidence of the constituents of the soup, the vegetables and flavouring, butter, hot milk, and a ham-bone; no canned food was used. Plaintiff's counsel concentrated upon the ham-bone as the source of the alleged bacterial infection; a medical witness said a ham would develop toxin in 24 hours. The defendants' chef recounted the history of the ham. It came in on that Monday morning and figured on the menu as braised ham. He sawed off the knuckle-bone, chopped it into four pieces and put it into the soup, which was strained and kept in a stone jar standing in boiling water; 13 or 14 portions of the soup were served to customers, and the rest was finished by the staff next day. For the restaurant it was said that nobody else complained; a waitress suggested that the plaintiff looked ill when he came in. The plaintiff and his wife gave evidence that at an interview the management had admitted liability for the poisoning and had discussed the amount of compensation. This the defendants denied.

The plaintiff's doctor, who saw him on the day after the meal, had no doubt he was then suffering from food poisoning. The patient was confined to his bedroom for several weeks; he also suffered from weakness of the muscles of the heart. It was unusual, the witness said, but not very unusual, for food poisoning to take effect so quickly as had happened in Mr. Barclay's case. He agreed in cross-examination that he had known no previous case where food poisoning had lasted a year. He admitted he had said to a doctor who was examining the patient on the defendants' behalf that the absence of diarrhœa forced him to conclude that the patient's condition could not be proved due to food poisoning. When asked about the possibility of gastric influenza, the witness said the patient's subnormal temperature was inconsistent with the suggestion. On the other side, a doctor called by the defendants stated that the symptoms pointed to gastric influenza rather than to poisoning. Poisoning without diarrhœa was very rare, and he had himself never known a case of food poisoning resulting in almost immediate collapse. The conflict of opinion, as well as the dispute of facts, caused the jury to disagree. The result is that the plaintiff is free to begin his action all over again.

Murder by Mental Hospital Patient

At Birmingham assizes last week Joseph Millard was found "guilty but insane" on a charge of murdering his wife at their home on Nov. 22nd. Millard, said the prosecution, had also murdered his three children at the same time. He was a man of good character who, after a long period of unemployment, had gone into the Dudley Road Hospital. He complained of obscure pains and apparently had delusions that the doctors were conspiring to kill him, and that the nurses tried to inject germs into his body to make him insane. Two days after admission he tried to run out of the ward without his clothes; that night he had to be forcibly tied to his bed. He was then transferred to Ordington House, a public assistance institution, for observation of his mental condition. There was medical evidence that at Ordington House he was violent and had to be confined in a padded cell. The fact which naturally surprised the court was that a mental patient in this condition had been discharged from the hospital on the application of his wife a few days later. "If that is the law," observed the commissioner who was trying the case, "the sooner it is altered the better." It was explained on behalf of the local authority that an inquiry had already been set on foot. The patient, it seems, had not been admitted to hospital on an order under the Lunacy Act, and this fact presumably made it difficult to detain him when his wife applied for his discharge. Further light will doubtless be shed on the facts when the inquiry is completed. Meanwhile it is possible to make the general reflection that the law courts, by awarding huge damages against medical practitioners on allegations of wrongful certification or otherwise, have not exactly encouraged the medical profession to run any risks with the law.

BRITISH INSTITUTE OF RADIOLOGY

ON Dec. 8th Dr. STANLEY MELVILLE took the chair at a discussion on radiotherapy, with special regard to the

Value of Hard and Soft Rays

DR. W. LEVITT discussed the meaning of the term radiosensitivity. He advanced the view that the all-important factor in determining whether a malignant growth would respond to radiations or not was a question of dosage. In some cases, such as seminoma and lymphosarcoma, the requisite dosage could be applied without obvious effect upon the healthy tissues. These were the cases we have learnt to call highly radiosensitive. In certain other cases, such as carcinoma of the cervix, the requisite dosage would produce a moderate, though recoverable, injury to the surrounding tissues, and these we have learnt to term moderately radiosensitive. In still other cases, such as carcinoma of the rectum, the requisite dosage could not be given without running the risk of severe damage to the surrounding tissues, and these are the radio-resistant cases. It was known that carcinoma of the œsophagus tends to be of a histological type which is moderately radiosensitive, and arguing on these lines it should therefore be possible to apply to these cases a sufficient dose to cause disappearance of the growth without undue damage to surrounding organs. He had recently treated at St. Bartholomew's Hospital a series of eight unselected cases of carcinoma of the œsophagus by a new method designed to ensure adequate dosage to the œsophageal growths, and of these eight cases, all of which had high degrees of obstruction, seven were now swallowing normally, and in six the disease seemed to have disappeared completely. One patient had been at work for nearly six months; the others were very recent. In all these cases general reactions were produced by the treatment; yet seven of the eight patients were now swallowing normally. He had no doubt that the best results were only to be obtained by the use of adequate doses of hard (or short wave-length) radiations. In Paris, Frankfurt, Berlin, Stockholm, and New York the use of soft rays and small doses in malignant disease had long since been abandoned.

Dr. **Russell Reynolds** emphasised the value of long wave-length therapy, particularly for benign growths, while admitting that the shorter wave-lengths were more valuable for carcinoma. Any condition that would recover under treatment with long waves should, he thought, be treated with them, on account of their less harmful effect on the blood-cells.

Dr. G. F. **Stebbing** said that the improved results obtained by treating malignant growths by X rays had coincided with the shortening of the wave-length of the radiation used. Intensity of radiation and the time over which it was administered were both important factors, but the greatest improvement in the future was to be expected by the use of shorter waves. Such waves had two valuable properties: (1) greater penetration without damage to the overlying skin, particularly where it was possible to treat the growth by a number of converging beams; and (2) selective action on malignant tissue. This selective action was not universally admitted, but many clinicians and some physicists—e.g., Failla—were convinced of it. Once it was proved that short waves could give results not to be obtained in any other way, he thought there would be no difficulty in getting X ray apparatus of higher voltage and large masses of radium.

Dr. **Hernaman-Johnson** said he had leaned to the view that X rays had a selective destruction action on cancer cells, and that if a "critical" dose could be given all would be killed. Accumulating evidence had, however, convinced him that the action was mainly indirect, a vital reaction in which the surrounding tissues played a heavy part. On this view the healthy tissues were allies instead of mere hindrances to efficient dosage. On the question of the relative value of short and long wave-lengths he could say little. A sufficient dose must be got to deep-seated lesions, but whether the wave-length was of importance there were no sufficient data to determine.

Dr. D. **Webster** said that he was not satisfied that there was any true differential action dependent on wave-length, and he thought that all physicists except Failla and Russ agreed with him. In his experience similar results could be obtained with X rays or radium.

Dr. F. **Roberts** said he thought the shorter wave-lengths were of advantage owing to the greater depth it was possible to reach with them, but he was not convinced of the differential action of short waves.

Dr. L. A. **Rowden** stressed the importance of rapidity of growth as a factor of radiosensitivity, and said he found the administration of potassium iodide during radiation a help.

Dr. N. S. **Finzi** said that the shorter the wave-length the better the result, and referred to cases of his own in which the healing of the growth was obtained with very little reaction of the healthy tissue by short waves.

British Institute of Radiology and Roentgen Society

The annual dinner of these united bodies was held on Friday, Dec. 8th, at the Trocadero Restaurant, London, Dr. Stanley Melville, president, being in the chair. The toast of the Institute was proposed by Mr. Thurston Holland in a humorously colloquial style, concluding with a warm congratulation to the society in having elected the present occupant of the presidency to direct their activities, when he set out the assiduous part that Dr. Stanley Melville had played in the advancement of radiology. Dr. Stanley Melville, in returning thanks, said that the institute was originally started as an act of faith on the personal guarantee of four medical members, but in 1927 it amalgamated with the old-established Roentgen Society. The membership, he said, now consisted of medical radiologists and other medical men in sympathy with their objects: physicists, without whose guidance progress would have been impossible, and leaders in the industrial world. Scientific knowledge had secured progress on the practical side. He referred particularly to the attitude of the manufacturers when certain tragedies among the workers proved the dangers of their duties. The dangers were sadly appreciated, but the means of combating them were then unknown. At this juncture, in 1921, the X Ray and Radium Protection Committee was formed, and through the good offices of Mr. G. W. C. Kaye, D.Sc., was granted the resources of the National Physical Laboratory. The first recommendations published by the committee required the immediate scrapping of apparatus and the disorganisation of manufacturing specifications. Without a moment's hesitation the British manufacturers came whole-heartedly into the new scheme regardless of considerable financial loss. At the International Congress, held at Stockholm in 1928, the British recommendations were adopted as the "International Standard of Protection," when the British manufacturers got the meed of praise that was their due. The example was soon followed by other countries, which until then had not the foggiest idea of what protection implied. To this same body of people was due the remarkable exhibition of apparatus during the present annual congress. The toast of the Guests was proposed by Mr. Cuthbert Andrews, who was very thorough in the way in which he worked through the lists of guests, making biographical notes as he went along. Prof. J. C. M'Lennan and Sir Squire Sprigge replied.

Holme Lacy as Mental Home.—Subject to certain structural improvements, the Ministry of Health is now prepared to give general approval to the scheme of the Herefordshire county council for using Holme Lacy as a home for private mental patients. The house, for long the seat of the Earls of Chesterfield, was presented to the council by Mrs. Noel Wills. The scheme will require a capital expenditure of £18,000.

CORRESPONDENCE

BORROWING MONEY TO BUY A PRACTICE

To the Editor of THE LANCET

SIR,—I have read with great interest the leading article on pages 1324–25 of THE LANCET of Dec. 9th. Reference is there made to the scheme for the advance of additional capital worked by the Medical Sickness Annuity and Life Assurance Society, but it should be recalled that the original scheme of this kind, upon which all others are based, was that worked out in 1924 and 1925 between the committee of management of the Medical Insurance Agency and the managing director of the Friends' Provident and Century Life Office. This scheme was devised throughout for the protection of the medical man, and embraced all the desirable points mentioned in your article.

A similar scheme has for several years been worked, with equal regard to the interests of the medical practitioner concerned, by the Clerical Medical and General Life Assurance Society, and it is doubtless the success of the schemes worked by these two companies and the Medical Sickness Annuity and Life Assurance Society, which has induced such a large number of companies and firms to exploit the medical profession in the manner and to the extent which has led to the disclosures of Mr. Townley and others, and to the present action which it is proposed to take to deal with the existing situation.

I am, Sir, yours faithfully,
L. FERRIS-SCOTT,
Hon. Sec., Medical Insurance Agency, Ltd.
B.M.A. House, Tavistock-square, W.C., Dec. 9th, 1933.

THE MIDDLE-CLASS PATIENT WHO CANNOT PAY

To the Editor of THE LANCET

SIR,—Your leading article of Nov. 25th and the letter from Dr. Alfred Cox last week have created a considerable amount of interest. Will you allow me, as one of the founders of the British Provident Association in collaboration with the late Dr. Gordon Dill of Brighton 12 years ago, to emphasise what may be taken as the essentials of a sound provident scheme for the middle classes?

1. It should be sufficiently wide as not to be parochial. Ideally this width should be national.
2. It must be actuarially sound. This means that subscriptions need to be of a rate which will enable the subscribers to be assured of grants in aid which will not render the pool bankrupt.
3. Benefits should be as wide as possible within the range of the premia.
4. All financial transactions, including the payment of grants, should be between the central organisation and the subscribers.
5. The scheme should in no way be linked with any one institution, nursing-home, or hospital, or even group of hospitals.
6. It must in no way interfere between the medical practitioner and the patient.
7. It ought to be a mutual aid and not a profit-making concern.
8. And, finally, it must be free from the least suspicion of charity.

It can be claimed without gainsay that the B.P.A. fulfils each and all of these fundamental points. For this, and many other reasons, it would seem that the Association, which has come to stay, should be given the full support of the medical profession in Great Britain. To this end a number of influential medical practitioners in provincial cities and towns are seeking to establish branches with a view to arouse interest and obtain subscribers in their local centres.

All further details can be obtained from the secretary, B.P.A., 30, Lancaster-gate, London, W.2.

I am, Sir, yours faithfully,
Dec. 11th, 1933. W. MCADAM ECCLES.

EPIDEMIC VERTIGO

To the Editor of THE LANCET

SIR,—Having seen a few cases of what I should like to call epidemic vertigo and fallen a victim to the complaint I should like to learn whether it is very common at present. Some number of years ago there was an epidemic, but on that occasion I saw only one case.

Most of the cases which have come under my notice have been in diabetic subjects, but the first case this year was a brother medico, under 40, who told me he had thought that he was developing a common cold for several days and then awakened in the night feeling sick. He got out of bed to obtain a utensil into which to vomit and was intensely giddy. He had to return to bed, and found that so long as he kept his head absolutely at rest he did not feel giddy, although he had intense nausea and vomited from time to time. When I saw him his symptoms called to mind the case I had seen several years ago and I was able to reassure him. His temperature was subnormal and his blood pressure very low. He had no aural symptoms nor any changes in his fundi. For several days he found that if he tried to get out of bed vertigo drove him back. His recovery to normal health was slow but work prevented him from taking the holiday he was ordered.

A few days later a case was referred to me of high blood pressure, along with diabetes mellitus, because the patient had had intense giddiness which had been attributed to hyperpiesia. The intensity and short duration of the vertigo led me to the conclusion that it was a case of epidemic vertigo. The next case was a patient who has advanced diabetes mellitus, well controlled with insulin; from time to time he reports in order that samples of blood may be taken and the sugar content estimated. He gave a history of a few days' intense vertigo whilst in the north of England; he had to retire to bed. The fourth case came from Cambridge and was very similar to the third except that, as soon as he was well enough, he came into a home in London, where I found that his blood pressure had fallen considerably and for a short time he needed an increase in the doses of insulin. This patient returned home on his original diet and dose of insulin with the sugar content of his blood at all times below 0·15 per cent., and he had another attack of the same complaint a week later.

Three of the staff in my house have had the complaint, as well as my secretary and her husband. In some of these diarrhœa after the third day has been quite distressing. About 14 days ago I thought that I was developing a cold, but it made no progress. A week ago I awakened about six o'clock, and on attempting to read found that the print moved. I got up, but had to sit down to shave and wash; the giddiness became intense and I returned to bed. Any movement of my head was followed immediately by intense vertigo and nausea. As soon as possible I gave myself a rectal injection of grs. 30 potassium bromide and sent for the doctor whom I had seen with an attack some weeks previously. I selected him because I feared that if someone who was not acquainted with the condition were to see me he might alarm my wife. Thorough examination showed no physical evidence of disease except abnormally low blood pressure. In my case recovery was rapid, but I was told that I looked too ill to get up for several days. Is this complaint sufficiently common to justify it being described in text-books? I think that the evidence all points against it being hypoglycæmia in the diabetic cases because, apparently, it was associated with hyperglycæmia.

I am, Sir, yours faithfully,

London, W.1, Dec. 8th, 1933. O. LEYTON.

ARTERIAL DISEASE OF THE EXTREMITIES

To the Editor of THE LANCET

SIR,—Quite apart from the pathological, bacteriological, and experimental evidence on which the tuberculous ætiology is based, the clinical features of Bazin's disease would not permit the acceptance of Mr. Dickson Wright's suggestion that it is a form of ischæmic ulceration. He is evidently confusing ulcerated erythema pernio (chilblain), often seen on the affected limb in infantile paralysis, with ulcerative erythema induratum (Bazin's disease), which starts as a hypodermic granulomatous nodule surrounding a tuberculous endophlebitis.

I am, Sir, yours faithfully,

Leeds Dec. 7th, 1933. JOHN T. INGRAM.

BLOOD PRESSURE AND SUBARACHNOID HÆMORRHAGE

To the Editor of THE LANCET

SIR,—In his paper on this subject (Nov. 11th, p. 1087) Dr. M. C. Andrews gives figures which are very interesting from an experimental point of view, but I do not think we should assume too readily that lumbar puncture is the only rational treatment for the condition.

In the first place, although we have plenty of opportunities for studying the blood pressure after a stroke, we know very little of the fluctuations before it, which culminate in hæmorrhage. This is bound to be so, because patients who ultimately have strokes usually enjoy good health, in spite of their high blood pressure; so that one usually finds that it is months or years since one has taken the pressure. Very often one has not seen the patient at all before the stroke. I myself have only one record which throws any light on the question—namely, of a woman of 63 who used to come for periodic routine examination. For four years her blood pressure had varied between 200/114 and 224/116. On Dec. 13th, 1932, it was 216/116; nine days later she had a stroke, and a few minutes after it the blood pressure was 226/96; not a very great change. She died in 14 hours, and post mortem there was a large hæmorrhage in the right frontal lobe breaking through into the lateral ventricle, several small punctate hæmorrhages into the substance of the frontal lobe, three in the medulla, and some subarachnoid hæmorrhage round the pons. Dr. Charles Lewsen (Brit. Med. Jour., 1930, ii., 313) described a stroke which took place immediately after the blood pressure had been taken, but did not state what the effect was.

That the cause of cerebral hæmorrhage is not simply the height of the systolic or diastolic pressure is suggested by some experiments quoted by Fishberg (Hypertension and Nephritis, 1931), where an enormously high pressure (1520 mm. Hg) caused rupture of the cerebral vessels in only two out of thirty cadavers, both syphilitic, and in only two out of ten cases from persons known to have had hypertension during life. Can we, then, believe that a temporary rise of, say, 50 mm. pressure, even if we knew that this commonly precedes it, is the cause of spontaneous intracranial bleeding? It may be urged that the fact that sudden death from stroke sometimes occurs at stool is due to the raised pressure caused by straining; but, before granting this, one ought to inspect the stool. Is it not equally possible that the call to stool is an early symptom of the stroke? I have had four deaths at stool in my practice: two from supposed heart failure (no post-mortem), nature of stool not noted; and two from cerebral hæmorrhage. One was a man of 60 whom I had never attended, who was found dead in the lavatory having passed a bulky loose motion; he had extensive subarachnoid hæmorrhage. The other was the woman of 63 referred to above; she was seized with violent headache and felt "as if something was going down her neck," and was taken to lie down; a few minutes later she was found semiconscious in the lavatory, having passed a watery evacuation. One can hardly suppose straining at stool to have caused the hæmorrhage in either of these cases.

It has been suggested that arterio-sclerotic narrowing and closure of the arterioles produces areas of softening in the brain, which deprive the vessels of their normal support, and that this is an important cause of hæmorrhage; if this be the case, surely lowering of the subarachnoid pressure by withdrawing cerebro-spinal fluid will increase the bleeding. We apply local pressure to check bleeding if we cannot tie the vessel. Is it, therefore, any more rational to risk increasing the hæmorrhage by lumbar puncture than to risk pressure anæmia of the brain by reducing the systemic arterial pressure by blood-letting? Very good results have been claimed for venesection in apoplexy (Proc. Roy. Soc. Med., 1927, xx., No. 10). Nine out of eleven of the cases mentioned by Dr. Andrews died; no doubt they would have done so in any case, but the treatment does not seem to have been very successful.

Cerebral hæmorrhage is often multiple, small punctate lesions lying around the main mass. These may easily be missed at an ordinary post-mortem, but can be seen if the brain is hardened for a few weeks before being cut. This suggests the possibility of a further factor—namely, localised flushing, probably temporary, of the area destined to become the site of a hæmorrhage. The old view that the cerebral vessels have no vasomotor supply is no longer tenable (McAlpine, Quart. Jour. Med., October, 1933). Local flushing is conjectural, as one cannot make direct observations in such cases; but hyperpietic patients are subject to other hæmorrhages, besides cerebral; epistaxis is by far the commonest, and here one can actually see what takes place. If one examines such a nose when it is not bleeding one sees a few dilated arterioles on the septum—arterioles which have lost part of their supporting tissues. But every nose which presents these appearances is not subject to violent spontaneous bleeding; some physiological spark is required to fire the anatomical powder. Consider now the aspect when the nose *is* bleeding; one catches glimpses of arterial pulsation surrounded by widespread capillary oozing from an intensely congested mucous membrane. To touch the bleeding spot with a cautery is no easy matter; but if one can apply it to a reasonably dry surface, the bleeding will sometimes stop. I do not believe that this is due to obliteration of the vessel, for this would hardly check the capillary oozing; moreover, I have known violent bleeding to recur two days after it had been checked by the cautery, which would hardly happen if the vessel had been destroyed. I think the cautery must bring about reflex contraction of the flushed vessels; but this conclusion obviously requires extensive observation and experiment.

The question of life or death in intracranial hæmorrhage is primarily whether the hæmorrhage can be stopped; if it can, the patient may make a good or even complete recovery; if not, he will certainly die. Analogy is hazardous, but I will risk drawing one between cerebral hæmorrhage and epistaxis, and suggest that, so far as lumbar puncture succeeds, it does so by causing reflex contraction of the vessels in the flushed area, rather than by adjusting the balance between the blood and subarachnoid pressure. Before any conclusion can be drawn between the relative merits of lumbar puncture and venesection, in intracranial hæmorrhage, a large number of cases should be treated by each method, preferably by the same observer; this has not, so far as I am aware, yet been done.—I am, Sir, yours faithfully,

Westgate-on-Sea, Nov. 26th, 1933. FREWEN MOOR.

TONSILLECTOMY

To the Editor of THE LANCET

SIR,—At the important debate last Thursday in the lecture hall of Manson House, on the motion "that operations for the removal of tonsils are too often performed without adequate cause," the chairman asked me quite unexpectedly to take part in the discussion, but at the moment I did not feel I could add any useful contribution. On thinking the matter over, however, I should like to make a few observations.

I believe that tonsillectomy is almost, if not quite, useless as a preventive of rheumatism in children, particularly if one attack has already occurred. If the tonsils are definitely septic no doubt their removal may be desirable, but the parents should be told that the operation is not likely to affect the tendency to rheumatism and particularly, unfortunately, the risk of recurrent rheumatic carditis.

It was stated in the debate that 75 per cent. of the new boys entering Eton have had their tonsils removed and that this percentage is materially increased during the years of their school life. To me it seems impossible that all these tonsillectomies can be really necessary. If required for so large a proportion of boys well looked after and living under the best conditions from their earliest days, surely the operation would be desirable in an even larger proportion of children amongst those brought up in less favourable surroundings. In other words, we should soon approach the position that nearly all children should have their tonsils removed which, to my mind at least, is a reductio ad absurdum. Some years ago, when perhaps tonsillectomy was not quite so popular as it is to-day, the medical officer of one of our large public schools told me that many boys in their earlier years at school had enlarged tonsils, but that in most of them the enlargement was subsiding or had disappeared by the time they left school. Now we are not content to wait and see; the tonsils are, or are supposed to be, enlarged and are at once condemned. Fortunately, as Mr. Tilley told us, nature does its best to replace the missing tissue.

Another speaker at the debate drew an eloquent picture of the improvement in the health and physique of the rising generation, which he apparently attributed entirely to the increasing frequency of removal of tonsils and adenoids. Surely this is not *the* factor, but at most one of the factors in the improvement; a number of others are almost certainly of far greater importance than operations on the throat. Either the statement was a mere oratorical exaggeration, in which case it has no scientific value, or else it was a striking example of the narrow outlook of the specialist.

Lastly, as one of the speakers reminded us, tonsillectomy is a serious operation, its possible sequelæ are numerous and serious, its fatalities, even in skilled hands, by no means negligible.

I am, Sir, yours faithfully,
J. WALTER CARR.

Cambridge-terrace, N.W., Dec. 8th, 1933.

*** We wished to report this debate but were asked by officers of the Fellowship of Medicine not to do so.—ED. L.

THE CONSULTANTS' PANEL

To the Editor of THE LANCET

SIR,—May I respectfully concur with every word in Mr. Mason's letter in to-day's issue of THE LANCET. For the benefit of those who have been puzzled by some of the points raised by Mr. Mason I may say that the British Medical Association is presenting a scheme to provincial consultants, under which there will be announcements of wholesale reduction of fees. Mr. Mason complains that the scheme is not wanted, that neither he nor anyone else asked for it, that it is cumbersome and superfluous, that it replaces confidential understanding between practitioner and consultant, and that those who are most concerned are in least voting power. I could not have put it better myself. Mr. Mason might have added that any consultant who thinks that price-cutting leads to bigger business is very much mistaken. And I might add that if the scheme is persisted in there will be endless friction in places where now harmony exists.—I am, Sir, yours faithfully,

Sunderland, Dec. 9th, 1933. G. F. WALKER.

DIET AND WEIGHT

To the Editor of THE LANCET

SIR,—It is not because I think that, to the general, caviare is an intellectually stimulating food that in my letters to you on the subject of body-fat I have avoided much appeal to the particular, but because I wished to keep the argument on the plane of deductive reason. Dr. Hales, in your issue of Dec. 9th, now puts to me such a definite but such a beautifully irrelevant question that even the child-like faith of a fat man in the goodness and guilelessness of his professional brethren must suspect a trap. That I can find no trap is probably a tribute to your correspondent's lack of guile, but in case I am falling headlong my defence will be that I probably suffer from cerebral lipæmia, with a definite intellectual scotoma, for I confess that Dr. Hales's question seems to me to have no bearing on the subject at issue. The fact that athletic old men are usually thin and "wiry" seems to me as little germane to the issue as that new-born babies are generally fat and flabby. Neither observation would appear to affect my contention that the fat deposits of an individual are usually a result of a glandular idiosyncrasy, which in turn is a result of an inherited protoplasmic experience, and that to attach less importance to these in-vivo experiments than to the in-vitro experiments of modern investigators who look upon obesity as necessarily an evil is a foolish proceeding.

Although I do not think it affects the argument either way, I can, however, give a positive answer to Dr. Hales's question. A few weeks ago I spent a day with a relation of mine who is nearly 80 years of age. He weighs just a little short of 200 pounds and has a definite "corporation." We played tennis in the morning, golf in the afternoon, and billiards after dinner. I hate to publish my shame, but he beat me at the latter two games and we dead-heated at an excellent dinner. He easily beat me at the "Taylor 1912," which we drank to celebrate the "Royal" he got this autumn.

I am, Sir, yours faithfully,

Dec. 10th, 1933. CHRISTOPHER HOWARD.

ANNULAR SHADOWS IN THE LUNG

To the Editor of THE LANCET

SIR,—The case, Pleural Ring *v.* Cavity, has raised such heat in the past, as the importance of these appearances seems hardly to justify. It might help towards a satisfactory verdict if it could be explained :

1. Why these flimsy creations often slowly alter their position in the chest without undergoing change of shape or size ?
2. Why, at any rate occasionally, the circumference breaks up into segments ?
3. How it is that no one apparently has ever as yet in England coaxed any lipiodol into these sometimes enormous areas ?

No single one of the theories seems to fit all the cases ; but many of the rings behave as if caused by a mycelial growth.

I am, Sir, yours faithfully,

Petersfield, Hants, Dec. 9th, 1933. FRANCIS JUPE.

HELMINTHS AND PELLAGRA

To the Editor of THE LANCET

SIR,—In your last issue Colonel Clayton Lane seeks to emphasise the importance of the association of pellagra with helminthic infections noted by Biggam and Ghalioungui and previously by Woodcock and states that it is one that cannot be disregarded in the future, rather suggesting that helminthiasis should be looked upon as a specific factor in the causation of the disease "in addition to deficient nutrition." It has been so held by some observers just as others have believed that amœbiasis was a specific factor in causation. The truth would appear to be that both may play a part in causing *deficient nutrition.* In treating a population suffering with pellagra it is just as necessary to eradicate worm infestations as it is to exterminate helminthiasis in populations to be treated for syphilis or leprosy if good results would be obtained. Deficient nutrition may result from deficient assimilation rather than deficient diet and many factors may be involved. In regard to pellagra, some of the most instructive cases are those associated with organic disease of or operative interference with the gastro-intestinal tract, and alcoholism.—I am, Sir, yours faithfully,

London, W., Dec. 9th, 1933. HUGH S. STANNUS.

DISCLAIMERS

To the Editor of THE LANCET

SIR,—The *North Mail,* in its issue for Dec. 9th, published in a conspicuous manner an account of the case of excision of the œsophagus which appeared in THE LANCET of the same date under my name, and an interview with me is mentioned. I had nothing to do with the publication, nor did I grant any representative of the paper an interview. Two newspapers rang me up on the telephone, and in both cases I said I could give no information whatever ; but to a direct question from the *North Mail* I replied that the man was alive and well and that the operation was unusual.

Will you publish this disclaimer in the proper part of the paper and let me know if permission was granted to use the illustration which the paper has reproduced.— I am, Sir, yours faithfully,

Newcastle, Dec. 11th, 1933. G. GREY TURNER.

*** No communication was received by the *North Mail* from us with regard to the use of the photograph, though its source is duly acknowledged.—ED. L.

To the Editor of THE LANCET

SIR,—In *Reynolds's Illustrated News* of Nov. 26th, 1933, there appears an interview with a "Professor" O. A. Newell, in which he says that "He made investigations in conjunction with Lieut.-Colonel P. J. Marett, medical officer of health for the island" (Jersey). I should be grateful if you would publish this complete denial. I do not know "Professor" O. A. Newell, and have never made any investigations in conjunction with him, nor have I ever corresponded with him. The statement objected to was brought to my notice in a letter sent to me, requesting to be informed as to where a supply of this "cure" could be obtained. Had it not been for this letter I should have known nothing about the article in the paper, and I am unaware whether my name has not been used on previous occasions.

I have called upon the editor of the newspaper in question to correct the false statement referred to and to apologise therefor.

I am, Sir, yours faithfully,

P. JANVRIN MARETT,

Jersey, Dec. 5th, 1933. Lieut.-Colonel.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt. W. R. S. Panckridge to be Surg. Lt.-Comdr.

Surg.-Comdr. L. W. Gemmell is appointed to *Pembroke* for R.N.B., Chatham.

ROYAL ARMY MEDICAL CORPS

Lt.-Col. G. F. Rugg, having attained the age for retirement, is placed on retd. pay.

Lt.-Col. W. J. E. Bell retires on retd. pay.

Maj. & Bt. Lt.-Col. W. H. O'Riordan and Maj. C. T. V. Benson to be Lt.-Cols.

TERRITORIAL ARMY

Lt. H. W. Bambridge to be Capt.

W. T. E. Blackmore to be Lt.

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj. I. J. Williams, from Active List, to be Maj.

ROYAL AIR FORCE

Flight Lt. E. Donovan is transferred to the Reserve class D(ii).

COLONIAL MEDICAL SERVICE

Dr. E. A. Blok and Dr. P. H. Perera have been appointed Provincial Surgeons, and Dr. P. B. Fernando, Medical Superintendent of the Galle Hospital, Ceylon. Dr. W. J. Laird becomes Medical Officer, Sierra Leone, Dr. D. P. Turner, Medical Officer, Nyasaland, and Dr. A. R. Paterson, Director of Medical and Sanitary Services, Kenya.

FOREIGN DECORATIONS.—Dr. Reginald Saint Alban Heathcote has been given the Royal licence and authority to wear the Insignia of the Third Class of the Order of the Nile, which has been conferred upon him by the King of Egypt, in recognition of valuable services rendered by him as Professor of Pharmacology in the Egyptian Faculty of Medicine.

OBITUARY

ROBERT PUGH ROWLANDS, M.S. Lond., F.R.C.S. Eng.

SENIOR SURGEON, GUY'S HOSPITAL

WE regret to record the death of Mr. R. P. Rowlands, senior surgeon to Guy's Hospital, which occurred suddenly on Thursday, Dec. 7th, at his house in Wimpole-street, to the grief of a large circle of patients and friends.

Robert Pugh Rowlands was born at Towyn in 1874, and was educated at Dolgelly School, proceeding for his medical training to Guy's Hospital. Here he had a distinguished career, winning prizes in many directions before qualifying as F.R.C.S. in 1901. In the earlier examinations for the medical degree at London University he obtained honours and medals in materia medica and pharmaceutical chemistry, and in 1902 he graduated as M.B., B.S. with the scholarship and gold medal for medicine. In the following year he proceeded to the degree of M.S., this time being bracketed for the gold medal. After holding the usual house appointments, he was elected assistant surgeon to the hospital in 1906, ten years later becoming full surgeon. He had in the meantime served as surgical registrar to the hospital and demonstrator of anatomy in the medical school.

MR. ROWLANDS.

[*Photograph by Lafayette*

He soon earned a high reputation alike as surgeon and author. He edited several editions of Jacobson's Operations of Surgery, the seventh edition of which valuable work was issued in coöperation with Mr. Philip Turner in 1927. He wrote, mainly in the columns of the *British Medical Journal*, valuable essays on the treatment of appendicitis and various gastric conditions, finally becoming a recognised authority on the surgery of the gall-bladder. What may be regarded as a summary of his views and his technique was published in the columns of *The Lancet* in 1929, being the Bradshaw lecture delivered before the Royal College of Surgeons of England. In this essay, describing the progress of abdominal surgery since Lister's time when little could be attempted beyond the opening of an abscess, he analysed the methods of distinguished predecessors like Lawson Tait and Mayo Robson, and demonstrated the evolution of technique down to the period when Moynihan, William Mayo, Walton, and the author himself became the pioneers. He was able to give with regard to his own work remarkable results following upon operations upon the gall-bladder and bile-ducts.

We owe to Mr. C. H. Fagge the following vivid picture of the man and his work :—

"Rowlands came to Guy's some 40 years ago, his early desire to join the medical profession being no doubt inspired by the example of his uncle, then in practice in Towyn, to whom Rowlands always gave credit for help and advice in his youth. How well Rowlands profited is shown by the fact that on his way to becoming senior surgeon to Guy's and Vice-President of the Royal College of Surgeons, he won innumerable prizes in the hospital and in the University of London, owing entirely to a good brain and unstinted industry. I first came in contact with him as a dresser when he, as a colleague of Dr. E. I. Spriggs, was serving his first three months under Mr. Lucas, I being, at the time, what was known as an 'extension dresser.' Two years later he succeeded me as house surgeon to Mr. Lucas, and in October, 1899, we were again colleagues as demonstrators of anatomy. This close companionship continued for five years, and since that date until recently we have been colleagues on the surgical staff. My most intimate contact with Rowlands was during those years of early struggle, when, ourselves only just embarked in early manhood, we were endeavouring to instruct in anatomy and in some measure to discipline students only a few years younger than ourselves. My chief impression of him at that time is of his modesty and loyalty. What he said he did, and having said that he would take a certain line he never departed from it. His was a nature to invite affection, for his gentleness and kindness of personality made him incapable of hurting the feelings of others. Not a few of my more recent recollections of him are associated with the kindly remarks in which he was pleased to voice his opinion upon some action or statement of mine in committee or council.

Perhaps his most notable exploit was the success with which he carried Jacobson's Operative Surgery through several editions; it could have required no little patience and tact to have worked in harmony with the author during his lifetime, and to have maintained the original features of the work; and to have brought it up to date from each succeeding edition, must have been a constant strain on his hours of freedom from professional work, and must have necessitated unceasing reference to an ever-growing surgical literature.

As operator his chief distinction was delicacy of technique and rapidity of execution. Those who were able, could learn much from his methods even if his teaching by the spoken word was not remarkably explicit. He wrote a good deal and in this showed his greater interest in the surgery of the abdomen than in that of other parts of the body. By his own unaided effort he made for himself a great position in British surgery, and success, when it came his way, did nothing to sully the gentle simplicity of his nature. There will be few with whom he came in contact in this world who will not be made the poorer by his passing."

Rowlands was elected to the Council of the Royal College of Surgeons of England in 1922, and was re-elected in 1930, served as Vice-President of the College, and at the time of his death was a member of the Council.

His term of office at Guy's Hospital had nearly expired, and he was looking forward to retirement in the country where he would have leisure to indulge his devotion to country pursuits and pastimes, and add to his great knowledge of natural history. He married in 1905 Alice, daughter of Mr. Edward Piper, of Bodiam, Sussex, and leaves a widow, a son, and a daughter.

ST. MARY'S HOSPITAL MEDICAL SCHOOL

OPENING OF NEW BUILDINGS

IN the presence of a gathering whose academic distinction was reflected in the glorious medley of their robes, His Majesty the King, accompanied by Her Majesty the Queen, opened the new medical school and pathological institute of St. Mary's Hospital on Dec. 12th. The order of proceedings was as dignified and appropriate to the occasion as are the buildings to their purpose. A dais had been erected in the library, a beautiful room panelled in oak, and nearly 1000 people were assembled, including students in the gallery, when a procession of professors and lecturers, and the medical and surgical staff of the hospital, passed through the centre gangway to the platform. They were followed by the presidents of the Royal Colleges and other bodies, and the officers of the University of London.

The Duchess of York, as president of the hospital, received the King and Queen and presented to them the Earl of Athlone, Chancellor of the University; Dr. C. M. Wilson, dean of the medical school; Sir Almroth Wright, F.R.S., director of the institute of pathology; Colonel N. E. Verey, chairman of the board of management of the hospital; and Sir Edwin Cooper, the architect. The Duke of York and Princess Arthur of Connaught were present, and Sir Hilton Young, as Minister of Health, was in attendance.

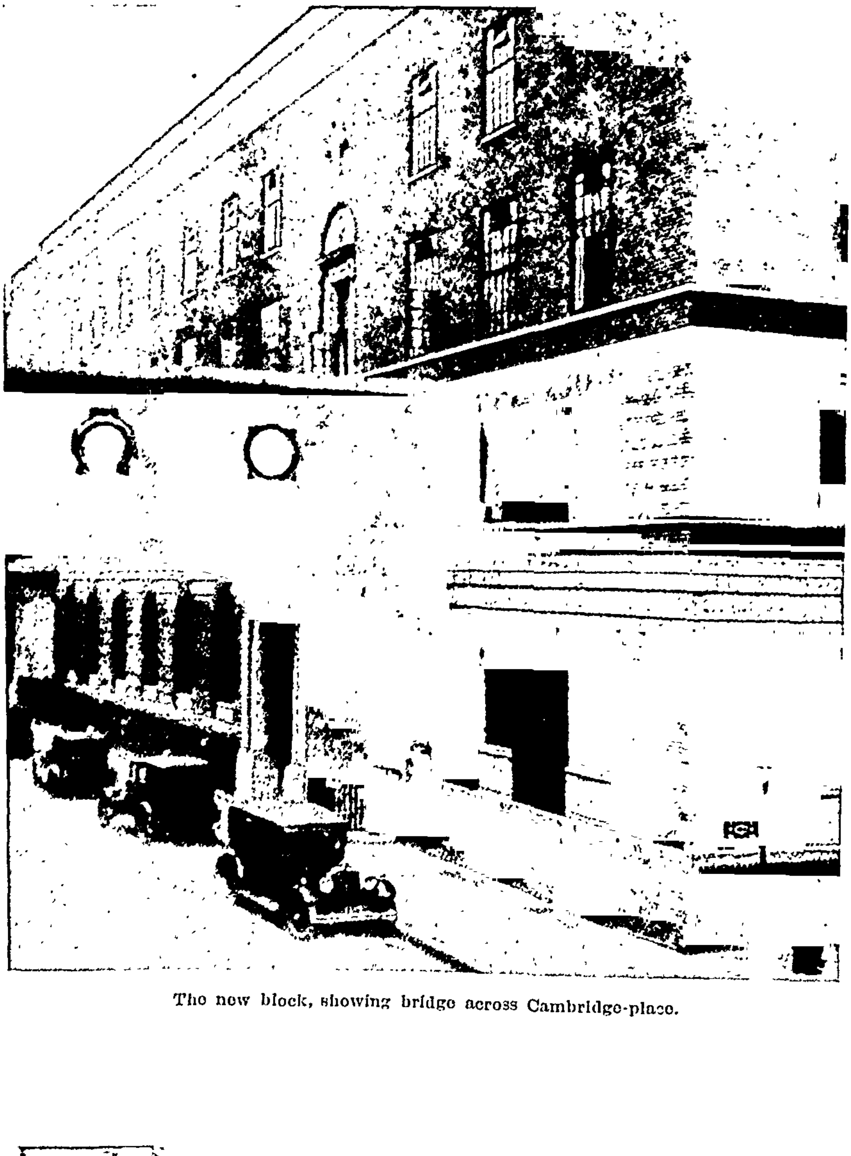
THE DEAN'S ADDRESS

"The building which Your Majesty and Her Majesty the Queen are honouring to-day replaces a school opened in 1852. That school was a relic of the time when students were apprentices and walked the hospitals, a time before the development of laboratories and scientific medicine. Generations had been constrained to work within those ancient walls because it had been supposed that the public was solely concerned with hospitals and the sick poor, and not with medical schools and the education of the doctor. Now that it has been made plain for the first time in London that a medical school can be completely rebuilt out of British funds, it is our hope that other schools may be encouraged to carry out their plans with the assistance of the public. It has been shown that there are in England men of vision who realise that the health of the people is inseparably associated with the training which the medical schools give to the doctors of to-morrow.

"It would not be fitting that this occasion should pass without recording the School's lasting gratitude to those who have made possible the erection of this building. In giving to a school of medicine they gave with both hands to the future. They gave because they understood before others that the health of the people is in the hands of those who practise medicine. To the late Lord Revelstoke, who began the fund, and to Lord Beaverbrook, without whom our plans would have come to nothing, we owe everything. We can take heart that the plans of this school have passed the scrutiny of two minds so individual and so searching; while the University of London in the very act of building a home of her own has contributed most generously to these splendid buildings, fashioned to our purposes by the genius of Sir Edwin Cooper.

"A part of this building, the Pathological Institute, we owe in great measure to Lord Iveagh. He has been associated at St. Mary's with the workers in this field for many years. He has seen work that possesses the authentic note of permanence and has made provision for its continuance.

"On an occasion like this our thoughts are not in the past, but in the future; with those who will



The new block, showing bridge across Cambridge-place.

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MR. ROWLANDS.

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He soon earned a high reputation alike as surgeon and author. He edited several editions of Jacobson's Operations of Surgery, the seventh edition of which valuable work was issued in coöperation with Mr. Philip Turner in 1927. He wrote, mainly in the columns of the *British Medical Journal*, valuable essays on the treatment of appendicitis and various gastric conditions, finally becoming a recognised authority on the surgery of the gall-bladder. What may be regarded as a summary of his views and his technique was published in the columns of *The Lancet* in 1929, being the Bradshaw lecture delivered before the Royal College of Surgeons of England. In this essay, describing the progress of abdominal surgery since Lister's time when little could be attempted beyond the opening of an abscess, he analysed the methods of distinguished predecessors like Lawson Tait and Mayo Robson, and demonstrated the evolution of technique down to the period when Moynihan, William Mayo, Walton, and the author himself became the pioneers. He was able to give with regard to his own work remarkable results following upon operations upon the gall-bladder and bile-ducts.

We owe to Mr. C. H. Fagge the following vivid picture of the man and his work :—

"Rowlands came to Guy's some 40 years ago, his early desire to join the medical profession being no doubt inspired by the example of his uncle, then in practice in Towyn, to whom Rowlands always gave credit for help and advice in his youth. How well Rowlands profited is shown by the fact that on his way to becoming senior surgeon to Guy's and Vice-President of the Royal College of Surgeons, he won innumerable prizes in the hospital and in the University of London, owing entirely to a good brain and unstinted industry. I first came in contact with him as a dresser when he, as a colleague of Dr. E. I. Spriggs, was serving his first three months under Mr. Lucas, I being, at the time, what was known as an 'extension dresser.' Two years later he succeeded me as house surgeon to Mr. Lucas, and in October, 1899, we were again colleagues as demonstrators of anatomy. This close companionship continued for five years, and since that date until recently we have been colleagues on the surgical staff. My most intimate contact with Rowlands was during those years of early struggle, when, ourselves only just embarked in early manhood, we were endeavouring to instruct in anatomy and in some measure to discipline students only a few years younger than ourselves. My chief impression of him at that time is of his modesty and loyalty. What he said he did, and having said that he would take a certain line he never departed from it. His was a nature to invite affection, for his gentleness and kindness of personality made him incapable of hurting the feelings of others. Not a few of my more recent recollections of him are associated with the kindly remarks in which he was pleased to voice his opinion upon some action or statement of mine in committee or council.

Perhaps his most notable exploit was the success with which he carried Jacobson's Operative Surgery through several editions; it could have required no little patience and tact to have worked in harmony with the author during his lifetime, and to have maintained the original features of the work; and to have brought it up to date from each succeeding edition, must have been a constant strain on his hours of freedom from professional work, and must have necessitated unceasing reference to an ever-growing surgical literature.

As operator his chief distinction was delicacy of technique and rapidity of execution. Those who were able, could learn much from his methods even if his teaching by the spoken word was not remarkably explicit. He wrote a good deal and in this showed his greater interest in the surgery of the abdomen than in that of other parts of the body. By his own unaided effort he made for himself a great position in British surgery, and success, when it came his way, did nothing to sully the gentle simplicity of his nature. There will be few with whom he came in contact in this world who will not be made the poorer by his passing."

Rowlands was elected to the Council of the Royal College of Surgeons of England in 1922, and was re-elected in 1930, served as Vice-President of the College, and at the time of his death was a member of the Council.

His term of office at Guy's Hospital had nearly expired, and he was looking forward to retirement in the country where he would have leisure to indulge his devotion to country pursuits and pastimes, and add to his great knowledge of natural history. He married in 1905 Alice, daughter of Mr. Edward Piper, of Bodiam, Sussex, and leaves a widow, a son, and a daughter.

available also for other lectures. The top floor houses the anatomical department. The dissecting-room is spacious and well ventilated, and the research rooms for the professor, lecturers, and honorary workers well planned. The Henry Davis museum in this department contains one of the most complete embryological collections in the country. The beautiful enlarged coloured models of anatomical parts which have contributed to the popularity of this department among students are now housed in cases, where they can be studied from any angle.

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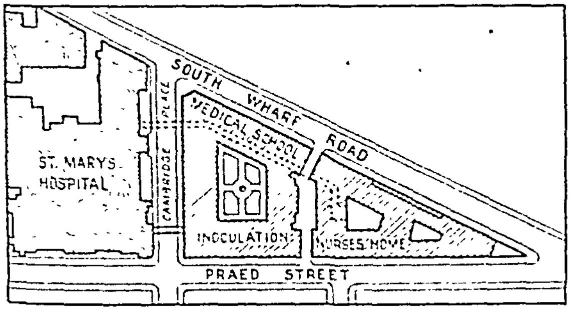

Plan showing the position of the new building which houses the medical school and the inoculation department of the Pathological Institute. The proposed nurses' home, not yet constructed, is also shown.

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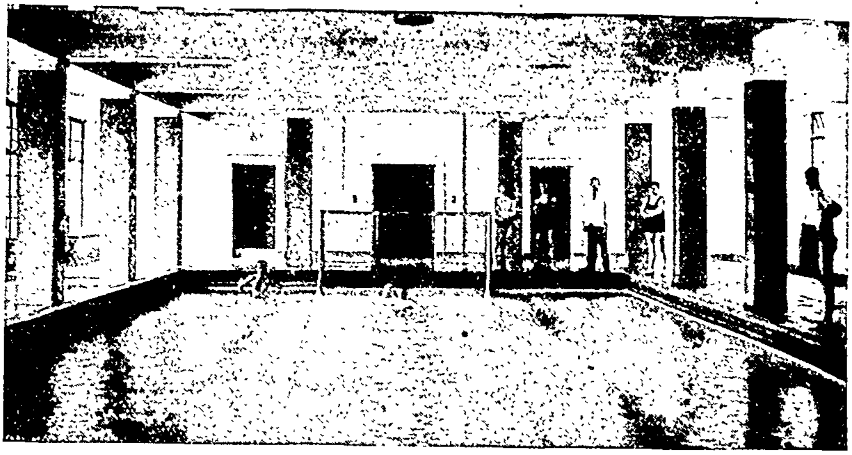
MINISTER OF HEALTH ON SLUM CLEARANCE.—Speaking at West Bromwich last Saturday Sir Hilton Young pointed out that each time had its specific task for the betterment of social conditions, and the specific task for the present time was to concentrate upon the slum evil. The hard core of the evil was the old house that is unfit for human habitation, that could not be made fit for habitation, and that must be cleared away. These were the houses which must be cleared away without compensation for the building, and could rightly be so treated without injustice to the owners. The most recent returns from local authorities showed that the number of such houses to be removed under their five-year programmes will exceed 210,000.



The swimming bath.

come after us and work within these walls. To those of my generation who came through the war, our own life sometimes seems a preparation for something that has already happened, and the only reward of our work that can be worth while is to see young men stepping forward, and perhaps to help them, however little, before they go out into the world.

"We assure Your Majesties that Your presence on this occasion will long serve as an encouragement to us to make this school in every way worthy of the honour conferred upon it and of the munificence of which it has been the object. As dean of this school, I have the honour to offer to Your Majesty and to Her Majesty the Queen an expression of our sincere and lasting loyalty and devotion, and to ask Your Majesty to be graciously pleased to declare this building open."

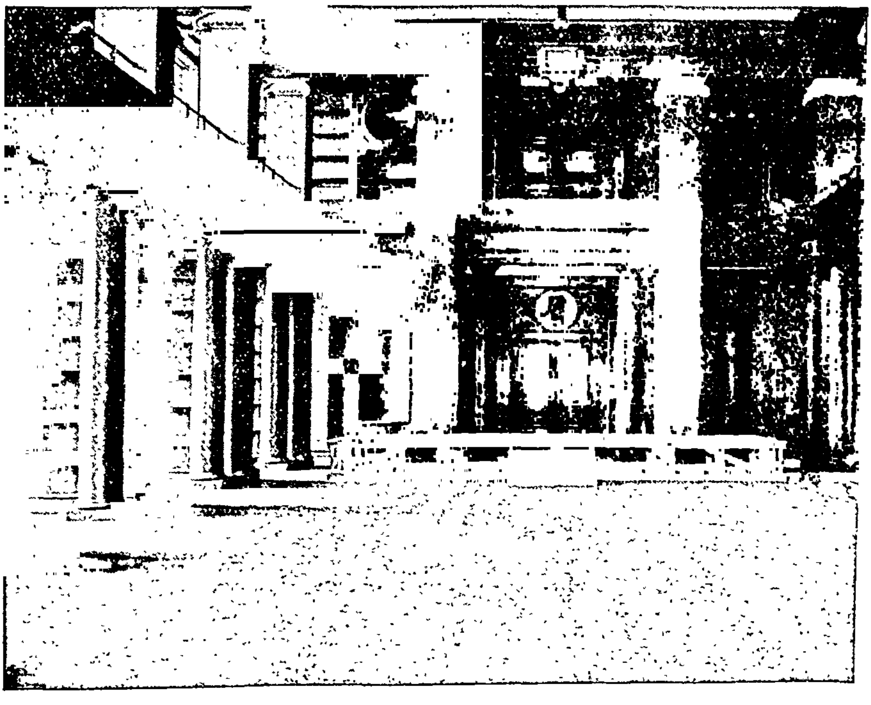
THE KING'S REPLY

The KING said in reply: "The Queen and I thank you for your loyal and dutiful address. We feel a special interest in revisiting St. Mary's Hospital since for close on 20 years I was a predecessor in office of your president, my dear daughter-in-law, the Duchess of York. I recall too that many years ago the skill and care of a nurse from this hospital contributed largely to my recovery from an attack of typhoid fever. Happily, curative and preventive medicine and surgery do not stand still. They are progressive sciences, and this was probably never more true than to-day. The tireless efforts of devoted workers, in the clinical sphere and in the laboratory alike, are ever wresting fresh secrets from nature and adding to existing knowledge in many different fields. No less important than the growth of knowledge is its dissemination to those who will apply it. Thus the health of my people, as you have well said, Mr. Dean, depends in great measure on the training which the medical schools of to-day give to their students, who will be the doctors of to-morrow.

"The buildings and equipment of a medical school must keep pace with knowledge, and inevitably there comes a time when radical change is required. You are indeed fortunate that when your need for a new school arose those wise donors of whom you have spoken, and others also, gave generously of their substance and helped with their inspiration. I doubt not, Mr. Dean, that this new provision for medical education in London owes much also to your own well-informed and untiring labours.

"I am happy to declare the new building of St. Mary's Hospital Medical School open, and I pray that with God's blessing the beneficent work of the school, and the hospital with which it is associated, may prosper and extend."

The Bishop of London then offered a prayer, and a hymn was sung by the assembly. A number of presentations were made, including that of students' representatives, before the King and Queen proceeded on a tour of inspection of the buildings.



The library.

FACILITIES FOR WORK

The floors of the new medical school are not rigidly allocated each to a department; there is some overlapping, and the lecture theatres, though a rather smaller one on the top (fourth) floor is designated anatomy and the one on the third floor physiology, they will be available also for other lectures. The top floor houses the anatomical department. The dissecting-room is spacious and well ventilated, and the research rooms for the professor, lecturers, and honorary workers well planned. The Henry Davis museum in this department contains one of the most complete embryological collections in the country. The beautiful enlarged coloured models of anatomical parts which have contributed to the popularity of this department among students are now housed in cases, where they can be studied from any angle.

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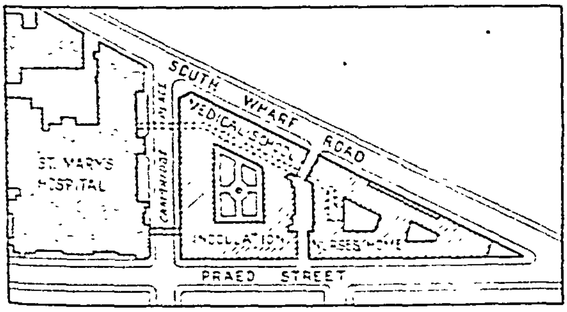

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MEDICAL NEWS

University of Oxford

The appointment by the board of the faculty of medicine of Dr. K. J. Franklin, demonstrator in pharmacology, as dean of the medical school will be submitted for approval in a convocation to be held on Saturday, Dec. 16th.

Dr. A. G. Gibson, reader in morbid anatomy in the university, has been appointed clinical examiner in medicine in the second examination for the degree of bachelor of medicine.

At recent examinations the following candidates were successful :—

Pathology.—H. Burton, D. G. W. Clyne, R. H. B. Cridland, J. P. Dewsbury, W. E. Henley, D. H. Hertz, C. A. Hinds-Howell, C. Hollins, R. H. G. Lancashire, T. G. Lowden, R. McDonald, A. P. Meiklejohn, A. E. Palin, W. R. Trotter, G. M. Afoumado, and N. E. R. Archer.

Pharmacology and Materia Medica.—S. E. Furber, D. Kendall, T. W. Lloyd, A. R. Norton, A. H. M. Richards, K. C. Royes, B. B. Waddy, and J. M. Sherring.

Forensic Medicine and Public Health.—J. H. Bartlett, C. A. Boucher, P. E. Burgess, A. H. G. Campbell, J. P. Child, A. C. Cox, R. H. Gardiner, P. R. Greeves, C. F. Hamilton-Turner, A. H. Hunt, T. G. Lowden, J. E. G. Pearson, W. H. A. Picton, and E. Starling.

Medicine, Surgery and Midwifery.—J. A. Boycott, G. H. Buck. A. C. Cox, E. P. Edmonds, G. E. Godbex, M. S. Good, J. W. Litchfield, G. E. Scott, J. A. E. Scott, E. Starling, W. F. de C. Veale, and M. A. Jennings.

All those who have passed in medicine, surgery, and midwifery have completed all the examinations required for the degrees of B.M., B.Ch.

University of Cambridge

Dr. F. C. Golding has been approved for the diploma in medical radiology and electrology.

Society of Apothecaries

This society will hold examinations for its diploma of mastery of midwifery twice yearly, beginning on the third Mondays in May and November. The regulations may be had from the registrar of the society, Water-lane, London, E.C.4.

University of Birmingham

Dr. J. F. D. Shrewsbury has been appointed reader in bacteriology and director of the public health laboratories, and Dr. E. Baylis Ash lecturer in the same subject and assistant bacteriologist in the laboratory. Dr. W. Carey Smallwood is to be university clinical teacher and assistant clinical lecturer in diseases of children.

University of London

At a meeting of the Senate on Nov. 22nd the following examiners were appointed :—

Medical degrees.—Prof. H. A. Harris, Prof. H. H. Woollard, Prof. W. E. Le Gros Clark, Prof. T. B. Johnston, Prof. William Wright, Dr. Thomas Yeates, Prof. J. E. S. Frazer, and Prof. M. F. Lucas Keene in anatomy ; Prof. E. B. Verney, Dr. Orlando Inchley, Dr. Philip Hamill, Dr. W. A. M. Smart, Dr. Nathan Mutch. Dr. V. J. Woolley, Prof. Samson Wright, and Prof. B. J. Collingwood in pharmacology ; Prof. J. C. Drummond, Prof. C. A. Lovatt Evans, Prof. J. P. Hill, Prof. Hamilton Hartridge, Prof. D. T. Harris, Dr. G. W. de P. Nicholson, Mr. W. R. Spurrell, Prof. John Mellanby, Prof. B. J. Collingwood, Prof. E. C. Dodds, Mr. J. H. Woodger, Prof. Samson Wright, Prof. Winifred Cullis, and (on recognition) Dr. W. H. Newton in physiology.

Dental degrees.—Prof. Le Gros Clark and Dr. Yeates in anatomy ; Prof. R. H. S. McDowall, and Mr. W. R. Spurrell in physiology ; Mr. A. G. Allen and Mr. J. B. Milne in prosthetic dentistry ; Mr. Evelyn Sprawson and Mr. H. C. Malleson in special anatomy, special physiology, and dental histology ; Dr. R. A. Rowlands and Dr. C. E. Newman in medicine ; Mr. G. E. Neligan and Mr. E. C. Hughes in surgery ; Mr. Frank Coleman and Dr. Hamill in pharmacology ; Prof. A. E. Boycott and Prof. James McIntosh in pathology and bacteriology ; Mr. Sprawson and Mr. E. B. Dowsett in dental surgery and operative dental surgery ; Mr. F. B. Bull and Mr. George Northcroft in orthodontics.

Diploma in Public Health.—Prof. M. E. Delafield, Prof. W. W. C. Topley, Prof. C. C. Okell, and Prof. H. B. Maitland in Part I. ; Prof. Major Greenwood, Prof. W. W. Jameson, Dr. Thomas Carnwath and Dr. Alexander Joe in Part II. ; Dr. Joe in hospital administration and the clinical aspects of infectious diseases.

At a meeting of the court held on Dec. 6th it was announced that the Middlesex county council had voted a grant of £100,000, payable over ten years, towards the new buildings on the Bloomsbury site. A condition of the grant is that the new central library shall be associated with the name of Middlesex.

University of Sheffield

Dr. B. D. Pullinger has been appointed a demonstrator in pathology.

University of Durham

The Chancellor of the University has appointed Sir Robert Bolam, F.R.C.P., to be a pro-vice-chancellor for two years from Feb. 6th, 1934.

University of Bristol

At recent examinations the following candidates were successful :—

FINAL EXAMINATION FOR M.B., CH.B.

Part I.—V. T. Baxter, Kathleen G. Brimelow, F. C. Collingwood, Theodora M. Crabtree, J. G. Field, P. N. Heron, A. E. Jowett, S. D. Loxton, and A. W. Woolley.

Part II.—S. B. Adams and Frances E. Powell (group II. completing the examination).

London (Royal Free Hospital) School of Medicine for Women

This year Mr. Gay French presided at the annual dinner, held at the Savoy Hotel, on Dec. 7th. The toast list was short, to give opportunity for dancing later, and the gathering was as usual well attended by past and present students and their friends.

The hon. Mrs. Alfred Lyttelton, G.B.E., proposed the toast of the School and Hospital. Commenting on changing fashions in therapeutics, she recalled a childhood marred by castor oil and rhubarb. What did not change was the need for a doctor to study the psychology of each patient. Whereas one suffering from civil war within was content with the assurance that he had indigestion, his stomach being out of order, another preferred to be told that in the chemical laboratory which dealt with ingested foodstuffs there was a hypochlorhydria. She begged doctors to remember what a strong impression their manner was liable to leave on their patients, irrespective of the actual words spoken. The Chairman, in reply, said that the woman's movement had reached a stage where it was no longer necessary to recall the past, but more appropriate to dwell on the present and future. He wished, however, to note some of the changes which had taken place at the Royal Free Hospital since he had joined it in 1911. He gave figures showing the immense growth in the number of beds and students; the consulting staff which had numbered 14 in 1911 now numbered 27. In his own department for ear, nose, and throat, the out-patients had risen from perhaps 2 new and 4 old cases to an annual attendance of over 7000, and whereas he had formerly had the option of one bed, now 32 beds were at the disposal of the honorary staff of the department, who now numbered three. Turning to the news of the year, he referred to the appointment of Prof. R. A. Webb to the chair of pathology on the return of Prof. Geoffrey Hadfield to Bristol, and to the new accommodation for the pathology department in the building of the Eastman Dental Clinic and for nurses in the Langdon Riddell Home. Future developments would include the increase of private wards from 10 to 23, and, eventually, the erection of five more floors to the Albert Levy wing, to be used for a gynæcology department and for residents' quarters.

Dr. L. S. T. Burrell proposed the principal guests by name, making graceful allusions to the qualities of each and welcoming the rest with great cordiality. Dr. F. M. R. Walshe, in response, felt it unnecessary to praise the members of the staff of the London School of Medicine for Women, since doubtless they were informed by the same healthy spirit of mutual admiration as were all other medical schools excepting, of course, his own. His advice to those contemplating consulting practice was based on that received by him from a senior colleague. Of the three ways which might lead to success the first —to attempt to get a reputation by research—was not to be recommended, on the grounds that the general practitioner does not like scientists and that a thirst for knowledge and a good bedside manner do not go together. As an alternative the social line might be tried, with an open house and a good table, but this was expensive and exhausting. The third method had been followed by his mentor, who had written a text-book which went into five editions. All that was needed was the use of a good library and some scissors and paste. To those who, like the speaker, arrived in the field too late for this procedure, there remained only the hollow and far from lucrative revenge of a disappointed man—to review the text-books of others. Dr. Walshe therefore advised young consultants to write text-books and do it quickly before clinical experience had vitiated their fluency. Lady Galway also replied for the guests. She spoke of common sense as the common denominator between women doctors and women educated for other work. She ventured to suggest that a problem which she understood was causing anxiety at the moment, that of the medical curriculum, would greatly benefit by the application of common sense to its solution.

Dr. Helen Boyle proposed the Chairman, praising Mr. Gay French not only for his professional skill but for his loyalty and helpfulness to old students of the school; in reply, Mr. French was proud to say that a substantial part of his post-bag was made up of communications from old students seeking his coöperation and advice.

Royal National Orthopædic Hospital

The Duke of Gloucester, president of the hospital, took the chair at a festival dinner held at the Dorchester Hotel on Dec. 6th, and proposed the toast of the hospital. He referred to the magnificent work of Mr. Herbert West, a former chairman of the hospital, and said that about £60,000 a year must be raised to maintain over 450 beds. There was a debt of nearly £35,000, and the demand for treatment seemed to grow ever more insistent. About 30 clinics had been established in coöperation with local authorities and medical officers of health, so that the services of the hospital might be brought as near as possible to the homes of the children. The work meant not only the cure of deformities, but transformation in the whole outlook of the cripple. No work could be more worth while, and it must not be cramped by temporary depression. He coupled with the toast the name of Lord Denbigh, a vice-president, and previously for many years chairman of the hospital.

Lord Horder proposed the health of the guests, and said that if an institution was to be known by its friends the Royal National Orthopædic Hospital was of good repute. While there was no best general hospital, all agreed that the premier hospital in orthopædic surgery was the Royal National. In this branch of surgery there was at the moment an urgent demand for a lower standard of work—whether it be called manipulative surgery or osteopathy or chiropractic or, as an outsize visiting card left on him recently had put it, "anatomy adjustment." The human hand was a wonderful instrument, and dramatic results occasionally followed its use with no brain behind it, but the human brain was also a wonderful instrument, and the two working together were best for the patient who needed diagnosis first and treatment afterwards. He hoped that there was still a small section of the public who required pathology as well as therapeutics.

Lord Burleigh replied for the guests, and the health of the President was proposed by Sir William Coxen, who had himself been a patient at the hospital. Donations amounting to over £3000 were promised at the dinner.

Medico-Legal Society

The annual dinner of this society was held at the Holborn Restaurant on Dec. 8th, Sir Bernard Spilsbury presiding. After the loyal toasts had been honoured, Lord Atkin, a past-president, proposed "Medicine and Law." He remarked that in America a notable medical contribution to justice was a drug under the influence of which witnesses and prisoners could not help telling the truth. He suggested its use on expert witnesses in this country—with the exception of their chairman. The inter-relation of medicine and the law grew closer every year, and the time was ripe for an efficient medico-legal institute in London. Staffed by men with an international reputation it would attract students from all countries.—Lord Dawson, in reply, said that lawyers had many things to teach medical men, especially about holidays. He quoted Bacon's words, written just before a long vacation, as one of the best definitions he had heard of expectant treatment: "carrying things in suspense and without prejudice until they resolve."—Sir R. Graham Campbell, also in reply, praised the work of the divisional surgeons of the metropolitan police, who did so much to help the magistrate even though they were unassisted by Lord Horder in the discharge of their midnight duties. The tie between the two professions was, he said, being strengthened by new ideas on the treatment of the criminal and the growing consciousness that crime was connected with mental and physical illness.

Lord Atkin, proposing "The Society" in the place of Lord Horder, praised its officers and past-presidents for their devoted work. The new transactions with their abstracts from foreign literature, were, he said, a most valuable contribution to science.—Sir Bernard Spilsbury, in reply, said that the Society had been founded towards the end of 1901 and had at first discussed the classical subjects of medical jurisprudence, such as post-mortem examinations and impulsive insanity. Its scope had widened enormously during recent years, and papers had been read on numerous topics such as the blood-groups, X rays, and the legal significance of shock, which would never have been contemplated in the early days of the society.

Lord Riddell proposed "The Guests." Members of the newspaper trade, he said, like lawyers and doctors, regarded the discovery of truth as their chief objective. They were, however, in the unfortunate position that if they made a mistake they had to pay for it.—Sir Holburt Waring, in reply, suggested that London had too many undergraduate and too few post-graduate medical schools. A medico-legal institute should not be associated with either, but should be housed in a properly-equipped building of its own in Bloomsbury, near or on the University site.—Mr. H. C. Dickens also replied.

British Nurses Overseas

The achievements and difficulties of British nurses working in the colonies were described at the Royal Empire Society at the Hotel Victoria on Dec. 5th by Lady (Samuel) Wilson. The Overseas Nursing Association, she said, was started in 1896, and besides selecting nurses for the Government services, the Association provides a number of nurses for municipal and private nursing-homes and hospitals used by the British communities in various parts of the world, both within and without the Empire. It not only supplied the nurses, but also helped nurses who come home invalided and have to take a rest or undergo some special treatment. The association have an executive committee over which Lord Athlone presides, but the actual selection of the nurse is left to a committee consisting of women who know the Colonies intimately and two matrons. The association keeps in touch with the nurses appointed, not only to know how each is faring, but also to ascertain whether she can properly be recommended for further employment. Lady Wilson expressed her conviction of the value of the influence which the right type of women could exert in the scattered lands where they work, sometimes a hundred miles from the nearest doctor. Mr. J. L. Gilks, director of medical and sanitary services, Kenya, said that he welcomed the opportunity of acknowledging the indebtedness of East Africa to the Overseas Nursing Association. Her duties and responsibilities were manifold. First, like other Government officers, she had to pass an examination in Swahili, for insufficient knowledge of the vernacular language was a fruitful source of difficulties and misunderstandings. In addition to work in European hospitals nursing sisters were posted to Indian and native hospitals, the duties here being concerned largely with supervision and teaching of the native staff of dressers and orderlies. The high degree of efficiency reached by native workers was a tribute to the patience and devotion of the nursing sisters who were responsible for their training. The work of nurses in connexion with clinics for women and children and with health visiting was of the utmost value. The scope for nursing sisters of the right type was widening.

Miss R. Darbyshire and Miss McManus, the matrons respectively of University College and Guy's Hospitals, spoke of nursing work in India and Egypt.

Royal Microscopical Society

At a meeting of this society, to be held at B.M.A. House, Tavistock-square, London, W.C., at 5 for 5.30 p.m. on Wednesday, Dec. 20th, Dr. J. N. McArthur will read a paper on a new type of portable microscope. Other communications will be made.

The Poisons Board

At its inaugural meeting held on Dec. 7th, Mr. M. D. Perrins was appointed secretary. Communications should be addressed to him at the Home Office, Whitehall, London, S.W.1.

Demonstration of Spa Methods

A demonstration of hydrological treatment, given at the hot mineral baths of Bath on Dec. 6th, was attended by many medical men from Somerset, Gloucester, and Wiltshire. Methods of treatment by the hyperthermal water, various kinds of douche massage, the recently installed thermal vapour treatment—a method lately devised by Bath and only obtainable there—and other forms of treatments were demonstrated. Dr. Vincent Coates, Dr. A. Gordon Watson, Dr. G. R. P. Aldred-Brown, and Dr. J. B. Bennett, physicians of the Royal Mineral Water Hospital, conducted the parties of guests, and Dr. F. G. Thomson, consulting physician to the hospital, gave an address on the physiological principles of hydrological treatment.

Queen's Institute of District Nursing

At a meeting of the council last week a number of badges were presented in recognition of 21 years' "satisfactory and loyal service" under the institute. It was reported that 27 nursing associations have been affiliated since the last meeting of the council, and that 260 nurses have been enrolled as Queen's nurses. Inspections have been made of 639 of the districts in England and Wales employing 1238 nurses. The large majority of these reports show that very good work is being done; a high standard of work is also shown in the reports on the county nursing associations. It was stated that the National Gardens Scheme has been the means of raising over £11,000 to help district nursing.

Litigation about Hospital Legacies

The late Mrs. Ludlow-Bruges who resided in Jersey and died there in July, 1932, devised her real property in Jersey together with the residue of her estate to Melksham Cottage Hospital, with a proviso that if it was unable to take the realty it should pass to the Royal Hospital and Home for Incurables, Putney, which is incorporated by Royal Charter. The will was contested on the ground that since the Melksham Cottage Hospital is not incorporated it had no legal claim to hold property in Jersey. Last week the Royal Court of Jersey upheld this contention, and the real estate will therefore go to the Putney Hospital. This decision does not affect the residue of the estate, which will fall to the Melksham Hospital. The solicitor to the trustees of that institution states that the legacy "may possibly be in the region of £100,000." The hon. treasurer of the Hospital for Incurables thinks that the value of the real property is unlikely to exceed £3400.

The Insulin Inquiry

The Board of Trade tribunal has acceded to the application made by the Association of British Chemical Manufacturers to place insulin and its salts on the list of articles dutiable under the Safeguarding of Industries Act. The tribunal consisted of Prof. F. G. Donnan, F.R.S., Prof. Samuel Smiles, F.R.S., and Mr. Henn Collins, K.C., acting as referee. Conflicting evidence was given at the inquiry as to whether insulin can properly be described as a fine chemical, and the representative of the Board of Trade said the Board must be satisfied this was so before insulin and its salts could be placed on the list. A majority of the members of the tribunal have now decided this question in the affirmative, and the decision is to take effect from Dec. 14th. It should be recalled that at the inquiry counsel gave an assurance on behalf of British chemical manufacturers that they had no intention of raising the price of insulin if the duty were imposed.

Sale of "Christmas Seals"

A scheme has been organised this year under the auspices of the National Association for the Prevention of Tuberculosis for the sale of Christmas seals in aid of the work of the association. Though the idea has already proved successful in many other countries this is the first time it has been tried in this country. The seals cost 4s. for a sheet of 100, but smaller quantities may also be obtained. They may be ordered from the association (Tavistock House North, Tavistock-square, London, W.C.1), or from the societies affiliated to it.

Memorial to Lord Knutsford

Last week a commemorative tablet to the late Lord Knutsford was unveiled at the London Hospital by Sir William Goschen, his successor in the chairmanship which he held for 35 years. The tablet and supporting pillars form the top and lintels of the entrance doors to the main hall. They are of polished Portland stone and were designed, as a gift to the hospital, by Sir Edwin Lutyens.

Memorial to the late Dr. Percy Hughes

A fund has been opened by the staff of the Worcestershire Mental Hospital with the object of erecting a memorial to the late Dr. Percy Theodore Hughes, medical superintendent of the hospital from 1906–33, and lecturer on mental diseases in the University of Birmingham. Those who wish to contribute should send their donations to the hon. treasurer, Mr. W. M. J. Coleman, Clerk's Office, Barnsley Hall Mental Hospital, Bromsgrove, Worcestershire, before Jan. 15th.

Sheffield Medical Sciences Club

On Dec. 9th this research club held a joint meeting with the Leeds Pathological Club and Manchester Medical Sciences Colloquium. The meeting took place at the University of Sheffield, Prof. G. A. Clark, dean of the medical faculty, presiding. In the early afternoon demonstrations were given in the bacteriology and pathology department by Prof. J. W. Edington, Dr. C. G. Paine, Prof. H. W. Florey, Dr. H. E. Harding, Dr. L. C. D. Hermitte, Dr. Margaret Pownall, and Prof. A. E. Naish; in the physiology department by Prof. Clark, Dr. C. G. Imrie, Dr. Elizabeth Eaves, Mr. J. G. Boswell, Dr. H. N. Green, and Prof. E. Mellanby; and in the anatomy department by Prof. C. J. Patten and Dr. M. A. MacConaill. After tea the following papers were read: Mrs. May Mellanby on the relationship between vitamin A and D deficiencies in puppies and caries and pyorrhœa in man; Dr. A. D. Ritchie on the rôle of lactic acid in muscular contraction; Prof. A. J. Hall on Bell's phenomenon; and Dr. E. A. Underwood on the use of potent formol toxoids in immunisation against diphtheria. Nearly a hundred members and visitors attended.

King Edward's Hospital Fund

At a meeting of the general council of this fund on Tuesday last, the Prince of Wales, as president, announced that this year the sum of £300,000 would again be distributed, though it was uncertain whether the available income would reach this total. The distribution was last year increased by £25,000 to meet the difficulties of hospitals during the economic crisis, and this increase is being maintained. Pointing out that few hospitals were in serious difficulties the Prince said: "That an annual expenditure of over £3,000,000, in London alone, should continue to be met year after year in these hard times, reflects the greatest possible credit both on the hospitals for the efforts they have made to meet the crisis, and on the public, including the patients themselves, who have responded so nobly. I think it is one of the most encouraging signs in the progress of our hospital administration that patients' payments in 1932, including £340,000 from the Hospital Saving Association, came to £1,139,000."

Among those present were Sir John Rose Bradford, Sir Cuthbert Wallace, Sir William Collins, Sir Cooper Perry, Mr. H. L. Eason, Dr. Morley Fletcher, Mr. Eardley Holland, and Dr. Gilbert Orme.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Unemployment Bill

IN the House of Commons on Dec. 5th the debate was resumed on the Labour Party's amendment to the motion for the second reading of the Unemployment Bill. The amendment was in the following terms:

> "That this House declines to assent to the second reading of an Unemployment Bill which fails to recognise that all the victims of the unemployment which is inherent in the modern system of industrial capitalism are entitled to equal and honourable treatment and maintenance from national funds so as to preserve intact their value to and status in the community."

INSURED PERSONS THROWN ON PUBLIC ASSISTANCE

Sir **FRANCIS FREMANTLE** said that the Bill contained one of the finest schemes for unemployment insurance which this or any other country had yet had. There was, however, a very definite plan in it, for the able-bodied unemployed would come under the poor-law assistance authority for medical relief. Men who through the whole course of their employment had been looked after medically by their panel doctors would now have to leave them for district medical officers who were paid a fixed sum whether they had 20 or 100 or 500 extra patients. Instead of having the choice of 16,000 panel doctors and of 10,000 chemist shops, the able-bodied unemployed man was to be put under a system which employed 3500 district medical officers, each of whom looked after an average population of 15,000 extending over 15,000 acres. The system of the district medical officer was grossly inefficient in general ways and unfair both to the patient and to the doctor. The district medical officer could seldom prescribe extras, never district nursing, although some boards subscribed to the local district nursing associations. He made no returns. He had rarely a superior officer to advise and to encourage him. He had no relationship to the medical officer of health and no incentive to advise, to prevent illness, or to report unhealthy conditions. His business was to supply medical relief which was too often limited to the giving of a bottle of medicine. The friendly relations which existed between doctor and patient were now to be broken. The Minister of Health had said it was perfectly open to the local authority to make use of the panel system for its public assistance organisation. Experiments had been made in that direction in Newcastle-on-Tyne, East Ham, and Wiltshire. But the Government must see this matter as a whole. The Bill threw these people on to the poor-law for medical relief. Doctors were clearly against it.

INCREASE IN MALNUTRITION

Dr. **SALTER** said the Bill did nothing whatever to remedy the terrible privations from which hundreds of thousands of unemployed people suffered. Not only were the 1931 cuts in unemployment benefit not restored by the Bill, but as he read the measure they were to be stereotyped and made practically permanent.

Mr. **HUDSON**, Parliamentary Secretary to the Ministry of Labour, indicated dissent.

Dr. **SALTER** said it was true that there was a vague possibility that at some remote period in the future the board might recommend an increase in benefit. But surely the fact that the first call on the Unemployment Fund was for reimbursing the Treasury for money expended in the past practically negatived any chance of any available surplus being allocated for increase of benefit. An enormous mass of evidence had been accumulated recently to show that the rates of benefit were totally insufficient to sustain life, or, in the words of the British Medical Association Committee, "to maintain health or working capacity." The Minister of Health had said that there was no evidence of any increase in malnutrition among elementary school-children in industrial districts. He could not have read the reports of their own medical officers of health:

> "There is no doubt that large numbers of children are carrying on in this country without adequate food. The money available for food in many homes is not sufficient to buy an adequate diet for a growing child, even on the plainest and simplest lines."—(M.O.H., Cumberland.)
>
> "The general health of the children showed uniform decline in the last quarter of the year, the unprecedented trade depression and consequent unemployment being the direct cause. . . . No one can deny that the ex-baby and the toddler were both definitely much less robust and much more in need of medical attention and much more prone to rickets than was the case two years ago." (M.O.H., Preston.)
>
> "In the present state of unemployment children are getting too much starchy food and too little fresh fruit, fresh milk, fresh vegetables, and fresh eggs."—(M.O.H., Burnley.)
>
> Reporting on rickets, which had gravely increased throughout the country: "It would seem that the prolonged industrial depression is having its grave effect on the mothers."—(M.O.H., Monmouthshire.)

Dr. **SALTER** went on to quote similar statements in support of his view by the medical officers of health for Cardiff, Blackburn, Stockton-on-Tees, Glasgow, and Hammersmith.

Sir F. **FREMANTLE** asked the hon. Member to read the favourable reports, and asked if there were not three times as many on the other side.

Dr. **SALTER** said he had quoted extracts which demonstrated conclusively his assertion that malnutrition was very widely prevalent at the present time among children.

Sir F. **FREMANTLE**: What does Sir George Newman say?

Dr. **SALTER** said he had given concrete evidence not from politicians but from unbiased persons who had to administer the Public Health Act. It was well known that young children, who were not properly fed, who were not getting sufficient calories, could actually put on weight and yet get every day nearer to death's door.

Dr. **O'DONOVAN**: No one will dispute the statement about fatness and want of health, but is not "at death's door" a little rhetorical?

Dr. **SALTER** said that children with extreme rickets, who were bloated and overweight, would be seriously affected by a slight disease which an ordinary child would throw off in a day or two.

Dr. **O'DONOVAN**: I agree.

Dr. **SALTER**: Chronic semi-starvation of the proper foods affected the brain functions and the brain structure, and this insufficient feeding which was going on produced the sluggishness of the brain, the inertia, and the incapacity of effort, and was really the cause of what was described as a loss of morale. The report of the B.M.A. committee on nutrition said: "The minimum required to maintain a man in health and efficiency is 5*s*. 10½*d*. a week." That was really an under-statement because the cost of a pint of milk was assumed to be 2½*d*. in summer and 3*d*. in winter, but actually milk could not be obtained under 3½*d*. a pint. Many of the ingredients of the diet set out in the report could not be purchased, in London at any rate, at the prices mentioned. The report stated: "It has not been found possible to prepare any diet for a child at a less cost than 2*s*. 6*d*. per week." Yet only 2*s*. was actually allowed, and this Bill proposed to perpetuate that allowance. The Ministry of Health had published its own report in which it was stated:

> "For the proper feeding of children in poor-law institutions, in homes containing 200 children, the weekly cost of food is 4*s*. 6½*d*. per head, if all provisions are bought at contract prices."

How could the unemployed buy food at contract prices? How could a man with a wife and three children between the ages of 6 and 14 spend £1 3*s*. 1½*d*. on food out of a total payment of £1 9*s*. 3*d*. when the rent would be 10*s*. or 12*s*. at least, and no allowance was made for renewals of clothing and fue ? Since the B.M.A. report was published there had been letters in the press from medical men and others pointing out that even the B.M.A. ration was only barely sufficient to maintain life at a level of subsistence.

GOVERNMENT REPLY

Mr. HUDSON, replying to the debate, said the Bill added one more storey to the edifice which this country provided for the recognition of its debt towards the less fortunate of its fellow citizens. It was a recognition of a problem, the cost of which had risen from £30,000,000 in 1900 to £490,000,000 last year. The Bill contained provisions which were not surpassed, and were not even equalled, in any other country in the world.

The Labour amendment was rejected by 435 votes to 81.

RELIEF FOR DISTRESSED AREAS

On Dec. 11th the House considered in Committee the money resolution in connexion with the Unemployment Bill. In the course of the debate Mr. CHAMBERLAIN, Chancellor of the Exechequer, dealing with suggestions which had been made by hon. Members that insufficient relief was being given to the distressed areas, said that those areas which had the highest cost obviously would get a bigger amount of relief than those which had a lower cost. It was quite true that the distressed areas would still be left with more to bear. This measure, however, was not an Equalisation of Rates Bill. It was not possible or desirable to try to equalise rates throughout the country, and certainly not at the expense of the taxpayer. But in the weighting of the block grant the distressed areas had been specially favoured, and by the arrangement in the Bill they would in fact get a larger amount of relief expressed in pounds than would be obtained by the areas which had not the same burden to bear. He did not think that there was a very strong case for doing anything more than was in the Bill, but at the same time he did recognise that in some of the areas which were called distressed the distress had lasted for a good many years and that in those areas there was a feeling that they were being driven really harder than they ought to be and that not sufficient recognition was made of their special circumstances. In so far as the grievance arose out of the faulty distribution of the block grant, that had to be a matter for investigation before 1937 when the grant was reviewed. But in order to help a little bit during the intervening period—he recognised that three and a half years might be thought rather a long time to wait—he would be prepared to deduct from the cost as ascertained in the standard year of the transferred expenditure the amount of the special provisional grant which would be given to distressed areas this year—deduct that from the standard cost and let the 60 per cent. contribution be on the reduced amount instead of on the gross amount. That would mean, as far as he could tell, somewhere about another £300,000 to be distributed to the distressed areas. It was not possible for him now to make an amendment in the financial resolution which would carry out this new proposal, but the Government would put down an amended resolution which would come before the House at a later stage.

Licensing Hours

In the House of Commons on Friday, Dec. 8th, Mr. J. C. LOCKWOOD moved the second reading of the Licensing (Standardisation of Hours) Bill. He said that the object of the measure was to do away with some of the extraordinary anomalies which had arisen under the Licensing Act, 1921. The Bill proposed that the hours in licensed houses and clubs should be, in the metropolitan area and in boroughs and urban districts with populations exceeding 20,000, from 11 o'clock till 3, with a two-hour break from 3 to 5, and that the closing hour should be 11 P.M. In the other districts it was proposed that the closing hour should be 10.30 P.M. The criticism would probably be made that the result of the Bill would be to increase drunkenness. If he thought that was true he would withdraw the Bill; but he did not believe that an additional opening hour would have that affect. It was true that the Bill was contrary to the recommendations of the Royal Commission, but although the report of that Commission was very valuable it did not necessarily represent the opinion of the country, and in any case the final decision lay with the House of Commons. The Bill would take away some of the existing powers of licensing justices, but their powers to grant extensions and special licences would remain.

Dr. SALTER moved the rejection of the Bill. He said that the promoters had shown remarkable audacity in bringing it forward in spite of the strong recommendation of the Royal Commission that the question should not be dealt with piecemeal, and in face of the opinion expressed by representatives of the Government that this matter was one that should be dealt with by the Government. The Commission recognised that there was no genuine public demand for an alteration of licensing hours and that the restrictions were definitely beneficial. The injustices and anomalies created by the Bill would be far greater than those which might be swept away.

Mr. HACKING, Under-Secretary, Home Office, said that the Bill did not apply to Sundays, and it was perhaps a little inconsistent to take away most of the powers of the licensing justices in respect of weekdays and to leave them their existing authority so far as Sunday was concerned. The Royal Commission was unable to find any evidence of a widespread wish for a relaxation of the existing system, and only two Members signed the report agai st that proposition. The Government had not been able to take into full consideration the re mendations of the Royal Commission and therefore not prepared themselves to propose l tion at the present time. The Government not be expected to support a Bill which cr across one of the main proposals in the repo Royal Commission, which had not yet re their hands the full and complete considera it deserved.

The Bill was read a second time by 10. 67. A motion to commit the Bill to a C of the whole House was defeated by 89 vo and the Bill will therefore go to a Standing Co

Protection of Dogs Bill

The Protection of Dogs Bill, a meas prohibit the vivisection of dogs," was prese the House of Commons on Wednesday, Dec. 6th, by Mr. J. LOCKWOOD. The Bill was read a first time.

HOUSE OF COMMONS

WEDNESDAY, DEC. 6TH

Flavouring Essences and Alcoholic Content

Dr. SALTER asked the Chancellor of the Exchequer if he was aware that at Messrs. Woolworth's stores in different towns throughout the country bottles of rum, brandy, and other flavouring essences, intended for human consumption, were being sold to the general public over the counter; that each bottle contained 10 c.cm., or one-third of an ounce, of a so-called flavouring agent; that this agent was composed of 90 per cent. of ethyl alcohol; that the bottles could be obtained by any customer in unlimited quantities; and if he was satisfied that an excise licence for the sale of intoxicating liquor was taken out in all these cases.—Mr. HORE-BELISHA (Financial Secretary to the Treasury) replied: I am aware that certain flavouring essences are on sale to the public by the firm mentioned and that the volume of the contents of the bottles is approximately as stated in the second part of the question. I am informed, however, that analysis shows that these essences do not contain any ethyl alcohol. The question of an excise licence for their sale therefore does not arise.

Dr. SALTER: Is the Financial Secretary aware that certificates of certified analysts have been published in the press saying that they do contain 90 per cent. of ethyl alcohol as well as other essences?

Mr. HORE-BELISHA: I do not know who the analysts are to whom the hon. gentleman refers, but we have had an analysis made in the Government laboratory and these essences contain only iso-propyl alcohol. The hon. gentleman will be consoled to know that iso-propyl alcohol is deficient in intoxicating properties. (Laughter.)

Dr. SALTER: I am not prepared to accept the hon. gentleman's statement.

Excessive Noise from Motor Vehicles

Sir WILLIAM BRASS asked the Minister of Transport whether, in view of the continuance of excessive noise from the exhausts of motor bicycles and sports cars in spite of the provisions of the Road Traffic Act, he would consider giving instructions to his commissioners in various districts to inspect all types of such cars and motor bicycles at the factories in order to make certain that these machines did not contravene Regulation 16 of the Motor Vehicles (Construction and Use) Regulation, 1931, before they were delivered to the public.—Mr. OLIVER STANLEY replied: Neither the traffic commissioners nor the certifying officers appointed under the Road Traffic Act have any powers in relation to ordinary motor cars or motor cycles, and it is not competent to me to issue instructions of the nature suggested by my hon. friend. I am, however, in communication with the manufacturers on this subject.

THURSDAY, DEC. 7TH

Housing

Dr. HOWITT asked the Minister of Health the estimated number of houses in England and Wales at the present t ie per 1000 of the population and, for comparison, corresponding figure in 1929 and in 1913, respectively.—HILTON YOUNG replied: The estimated numbers are ·8, 230·8, and 215·6.

Rural Water-supplies

r. HALL CAINE asked the Minister of Health if he d give any indication as to the conditions which ld qualify local authorities to apply for assistance n the Government grant set aside for the improvement ural water-supplies.—Sir HILTON YOUNG replied: ill to authorise the grant will be introduced shortly. intended that grants will be made in aid of approved mes of rural water-supply where the cost, after allowing fair contributions from county councils and rural strict councils, and the income from proper charges on ater consumers, would involve a deficiency-rate on the parish greater than the parish could reasonably be expected to bear.

Motorists and Accident Insurance

Mr. MANDER asked the Minister of Transport if he would consider the advisability, with a view to the prevention of accidents, of proposing legislation making it impossible for the driver of a motor car to insure himself against the consequences of any accident amounting to less than £10.—Lieut.-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) replied: My hon. friend has already given careful consideration to a somewhat similar proposal and has reached the conclusion that an uninsurable risk up to a sum of £10, as suggested by the hon. Member, would be equivalent in many cases to depriving the injured person of the compensation due to him. I do not think, therefore, that amending legislation on these lines is desirable.

Irish Free State People in Scotland

Captain RAMSAY asked the Secretary of State for Scotland how many persons born in the Irish Free State were at present resident in Scotland, and how many of these persons were in receipt of poor relief.—Sir GODFREY COLLINS replied: At the time of the 1931 census 54,854 persons born in the Irish Free State were resident in Scotland. There were also 874 persons who were born in Ireland but in whose case there is not sufficient information to say whether the birthplace was in the Irish Free State or in Northern Ireland. Exact information regarding the latter part of the question is not available, but on May 15th, 1933, 13,678 Irish-born persons, including dependants but not including able-bodied poor, were chargeable to Scottish poor-law funds.

Juvenile Employment

Mr. RHYS DAVIES asked the Home Secretary when the Bill to cover the conditions of young persons in unregulated trades would be introduced.—Sir J. GILMOUR replied: I assume that the hon. Member refers to the prospective Bill to regulate further the hours of young persons employed in the distributive trades. I hope to be in a position to introduce this Bill early in the New Year.

MONDAY, DEC. 11TH

The Price of Insulin

Mr. GEORGE HALL asked the President of the Board of Trade why the import duty on insulin had been increased from 10 per cent. to 33⅓ per cent.; and what would be the effect of this upon the price of imported insulin.

Mr. DAVID GRENFELL asked the President of the Board of Trade the amount of insulin imported into this country during the last convenient nine months; what was the world price at the beginning and the end of the selected period; what was the price of British insulin at corresponding periods; and whether, in increasing the import duty from 10 per cent. to 33⅓ per cent., consideration had been given to the additional cost that would have to be met by hospitals and sufferers from diseases for which insulin formed the basis of cure.—Dr. BURGIN (Parliamentary Secretary to the Board of Trade) replied: A tribunal constituted under the Safeguarding of Industries Act, 1921, as amended by the Finance Act, 1926, has recently decided that insulin and its salts fall within one of the general descriptions of goods scheduled as liable to duty under that Act. Insulin, therefore, now becomes subject to the Key Industry Duty of 33⅓ per cent. ad valorem. No statistics of imports or of world prices of insulin are available, but I am informed that for some time past the retail price of insulin from one maker in this country has been 1*s*. 8*d*. per 100 units and from the other makers 2*s*. per 100 units. An undertaking has been given on behalf of the British makers that their prices will not be raised as a result of the new duty, and my right hon. friend, the Minister of Health, has the question of the price of insulin very much in mind and proposes to watch the position closely.

Sir P. HARRIS: Does the hon. gentleman realise that this drug is vital for certain diseases, especially diabetes, that at present it is quite outside the reach of thousands of poor people and that the price ought to be very much lower if full advantage is to be taken of its remedial powers? (Hear hear.)

Mr. D. R. GRENFELL: Is there any possibility that any advantage accruing to the producers will compensate for the disadvantage to public health generally by the retention of a high price for this very valuable medical substance?

Dr. BURGIN: The whole question of insulin and its salts is, of course, receiving very careful consideration. A tribunal, deciding a purely legal question: Is this, or is this not, a fine chemical? has given a decision. The result is that a duty is automatically applied under the provisions of legislation going back to 1921. Obviously an opportunity must be given to consider the effects of that decision, but the undertaking that the price shall not be increased is a step in the right direction. Whether the price can be reduced is a matter that must be considered further and it shall be so considered.

Mr. GRENFELL: Will the hon. gentleman promise the House that he will report on these considerations at a convenient date in the future?

Dr. BURGIN: I will convey that suggestion to the President of the Board of Trade.

Sir J. HASLAM: May we take it that the present Government are not responsible for this duty, as insinuated by certain interested people in the press? (*Cries of* "Oh.")

Dr. BURGIN: That clearly results from what I have said. It was an Act of Parliament of 1921.

Sir F. FREMANTLE: Is there any assurance that there children between the ages of 6 and 14 spend £1 3*s.* 1½*d.* on food out of a total payment of £1 9*s.* 3*d.* when the rent would be 10*s.* or 12*s.* at least, and no allowance was made for renewals of clothing and fue? Since the B.M.A. report was published there had been letters in the press from medical men and others pointing out that even the B.M.A. ration was only barely sufficient to maintain life at a level of subsistence.

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The Labour amendment was rejected by 435 votes to 81.

RELIEF FOR DISTRESSED AREAS

On Dec. 11th the House considered in Committee the money resolution in connexion with the Unemployment Bill. In the course of the debate Mr. Chamberlain, Chancellor of the Exechequer, dealing with suggestions which had been made by hon. Members that insufficient relief was being given to the distressed areas, said that those areas which had the highest cost obviously would get a bigger amount of relief than those which had a lower cost. It was quite true that the distressed areas would still be left with more to bear. This measure, however, was not an Equalisation of Rates Bill. It was not possible or desirable to try to equalise rates throughout the country, and certainly not at the expense of the taxpayer. But in the weighting of the block grant the distressed areas had been specially favoured, and by the arrangement in the Bill they would in fact get a larger amount of relief expressed in pounds than would be obtained by the areas which had not the same burden to bear. He did not think that there was a very strong case for doing anything more than was in the Bill, but at the same time he did recognise that in some of the areas which were called distressed the distress had lasted for a good many years and that in those areas there was a feeling that they were being driven really harder than they ought to be and that not sufficient recognition was made of their special circumstances. In so far as the grievance arose out of the faulty distribution of the block grant, that had to be a matter for investigation before 1937 when the grant was reviewed. But in order to help a little bit during the intervening period—he recognised that three and a half years might be thought rather a long time to wait—he would be prepared to deduct from the cost as ascertained in the standard year of the transferred expenditure the amount of the special provisional grant which would be given to distressed areas this year—deduct that from the standard cost and let the 60 per cent. contribution be on the reduced amount instead of on the gross amount. That would mean, as far as he could tell, somewhere about another £300,000 to be distributed to the distressed areas. It was not possible for him now to make an amendment in the financial resolution which would carry out this new proposal, but the Government would put down an amended resolution which would come before the House at a later stage.

Licensing Hours

In the House of Commons on Friday, Dec. 8th, Mr. J. C. Lockwood moved the second reading of the Licensing (Standardisation of Hours) Bill. He said that the object of the measure was to do away with some of the extraordinary anomalies which had arisen under the Licensing Act, 1921. The Bill proposed that the hours in licensed houses and clubs should be, in the metropolitan area and in boroughs and urban districts with populations exceeding 20,000, from 11 o'clock till 3, with a two-hour break from 3 to 5, and that the closing hour should be 11 P.M. In the other districts it was proposed that the closing hour should be 10.30 P.M. The criticism would probably be made that the result of the Bill would be to increase drunkenness. If he thought that was true he would withdraw the Bill; but he did not believe that an additional opening hour would have that affect. It was true that the Bill was contrary to the recommendations of the Royal Commission, but although the report of that Commission was very valuable it did not necessarily represent the opinion of the country, and in any case the final decision lay with the House of Commons. The Bill would take away some of the existing powers of licensing justices, but their powers to grant extensions and special licences would remain.

Dr. Salter moved the rejection of the Bill. He said that the promoters had shown remarkable audacity in bringing it forward in spite of the strong recommendation of the Royal Commission that the question should not be dealt with piecemeal, and in face of the opinion expressed by representatives of the Government that this matter was one that should be dealt with by the Government. The Commission recognised that there was no genuine public demand for an alteration of licensing hours and that the restrictions were definitely beneficial. The injustices and anomalies created by the Bill would be far greater than those which might be swept away.

Mr. Hacking, Under-Secretary, Home Office, said that the Bill did not apply to Sundays, and it was perhaps a little inconsistent to take away most of the powers of the licensing justices in respect of weekdays and to leave them their existing authority so far as Sunday was concerned. The Royal Commission was unable to find any evidence of a widespread wish for a relaxation of the existing system, and only two Members signed the report ag st that proposition. The Government had no been able to take into full consideration the mendations of the Royal Commission and therefore not prepared themselves to propose tion at the present time. The Governme not be expected to support a Bill which across one of the main proposals in the re Royal Commission, which had not yet their hands the full and complete consid it deserved.

The Bill was read a second time by 67. A motion to commit the Bill to a of the whole House was defeated by 89 and the Bill will therefore go to a Standing

Protection of Dogs Bill

The Protection of Dogs Bill, a mea prohibit the vivisection of dogs," was prese the House of Commons on Wednesday, Dec. 6th, by Mr. J. Lockwood. The Bill was read a first time.

HOUSE OF COMMONS

WEDNESDAY, DEC. 6TH

Flavouring Essences and Alcoholic Content

Dr. Salter asked the Chancellor of the Exchequer if he was aware that at Messrs. Woolworth's stores in different towns throughout the country bottles of rum, brandy, and other flavouring essences, intended for human consumption, were being sold to the general public over the counter; that each bottle contained 10 c.cm., or one-third of an ounce, of a so-called flavouring agent; that this agent was composed of 90 per cent. of ethyl alcohol; that the bottles could be obtained by any customer in unlimited quantities; and if he was satisfied that an excise licence for the sale of intoxicating liquor was taken out in all these cases.—Mr. Hore-Belisha (Financial Secretary to the Treasury) replied: I am aware that certain flavouring essences are on sale to the public by the firm mentioned and that the volume of the contents of the bottles is approximately as stated in the second t of the question. I am informed, however, that ilysis shows that these essences do not contain any yl alcohol. The question of an excise licence for their ; therefore does not arise.

)r. **Salter**: Is the Financial Secretary aware that tificates of certified analysts have been published in the ss saying that they do contain 90 per cent. of ethyl ohol as well as other essences?

Ir. **Hore-Belisha**: I do not know who the analysts to whom the hon. gentleman refers, but we have had analysis made in the Government laboratory and these ences contain only iso-propyl alcohol. The hon. itleman will be consoled to know that iso-propyl alcohol deficient in intoxicating properties. (Laughter.)

Dr. **Salter**: I am not prepared to accept the hon. itleman's statement.

Excessive Noise from Motor Vehicles

Sir **William Brass** asked the Minister of Transport iether, in view of the continuance of excessive noise m the exhausts of motor bicycles and sports cars in ite of the provisions of the Road Traffic Act, he would nsider giving instructions to his commissioners in various stricts to inspect all types of such cars and motor bicycles the factories in order to make certain that these machines l not contravene Regulation 16 of the Motor Vehicles onstruction and Use) Regulation, 1931, before they were livered to the public.—Mr. **Oliver Stanley** replied: either the traffic commissioners nor the certifying ficers appointed under the Road Traffic Act have any wers in relation to ordinary motor cars or motor cycles, id it is not competent to me to issue instructions of the iture suggested by my hon. friend. I am, however, communication with the manufacturers on this subject.

THURSDAY, DEC. 7TH

Housing

Dr. **Howitt** asked the Minister of Health the estimated umber of houses in England and Wales at the present ie per 1000 of the population and, for comparison, corresponding figure in 1929 and in 1913, respectively.— **Hilton Young** replied: The estimated numbers are ;·8, 230·8, and 215·6.

Rural Water-supplies

Ir. **Hall Caine** asked the Minister of Health if he ild give any indication as to the conditions which uld qualify local authorities to apply for assistance m the Government grant set aside for the improvement rural water-supplies.—Sir **Hilton Young** replied: Bill to authorise the grant will be introduced shortly. i intended that grants will be made in aid of approved mes of rural water-supply where the cost, after allowing fair contributions from county councils and rural strict councils, and the income from proper charges on ater consumers, would involve a deficiency-rate on the parish greater than the parish could reasonably be expected o bear.

Motorists and Accident Insurance

Mr. **Mander** asked the Minister of Transport if he would consider the advisability, with a view to the prevention of accidents, of proposing legislation making it impossible for the driver of a motor car to insure himself against the consequences of any accident amounting to less than £10.—Lieut-Colonel **Headlam** (Parliamentary Secretary to the Ministry of Transport) replied: My hon. friend has already given careful consideration to a somewhat similar proposal and has reached the conclusion that an uninsurable risk up to a sum of £10, as suggested by the hon. Member, would be equivalent in many cases to depriving the injured person of the compensation due to him. I do not think, therefore, that amending legislation on these lines is desirable.

Irish Free State People in Scotland

Captain **Ramsay** asked the Secretary of State for Scotland how many persons born in the Irish Free State were at present resident in Scotland, and how many of these persons were in receipt of poor relief.—Sir **Godfrey Collins** replied: At the time of the 1931 census 54,854 persons born in the Irish Free State were resident in Scotland. There were also 874 persons who were born in Ireland but in whose case there is not sufficient information to say whether the birthplace was in the Irish Free State or in Northern Ireland. Exact information regarding the latter part of the question is not available, but on May 15th, 1933, 13,678 Irish-born persons, including dependants but not including able-bodied poor, were chargeable to Scottish poor-law funds.

Juvenile Employment

Mr. **Rhys Davies** asked the Home Secretary when the Bill to cover the conditions of young persons in unregulated trades would be introduced.—Sir **J. Gilmour** replied: I assume that the hon. Member refers to the prospective Bill to regulate further the hours of young persons employed in the distributive trades. I hope to be in a position to introduce this Bill early in the New Year.

MONDAY, DEC. 11TH

The Price of Insulin

Mr. **George Hall** asked the President of the Board of Trade why the import duty on insulin had been increased from 10 per cent. to 33⅓ per cent.; and what would be the effect of this upon the price of imported insulin.

Mr. **David Grenfell** asked the President of the Board of Trade the amount of insulin imported into this country during the last convenient nine months; what was the world price at the beginning and the end of the selected period; what was the price of British insulin at corresponding periods; and whether, in increasing the import duty from 10 per cent. to 33⅓ per cent., consideration had been given to the additional cost that would have to be met by hospitals and sufferers from diseases for which insulin formed the basis of cure.—Dr. **Burgin** (Parliamentary Secretary to the Board of Trade) replied: A tribunal constituted under the Safeguarding of Industries Act, 1921, as amended by the Finance Act, 1926, has recently decided that insulin and its salts fall within one of the general descriptions of goods scheduled as liable to duty under that Act. Insulin, therefore, now becomes subject to the Key Industry Duty of 33⅓ *per cent. ad valorem.* No statistics of imports or of world prices of insulin are available, but I am informed that for some time past the retail price of insulin from one maker in this country has been 1*s.* 8*d.* per 100 units and from the other makers 2*s.* per 100 units. An undertaking has been given on behalf of the British makers that their prices will not be raised as a result of the new duty, and my right hon. friend, the Minister of Health, has the question of the price of insulin very much in mind and proposes to watch the position closely.

Sir **P. Harris**: Does the hon. gentleman realise that this drug is vital for certain diseases, especially diabetes, that at present it is quite outside the reach of thousands of poor people and that the price ought to be very much lower if full advantage is to be taken of its remedial powers? (Hear hear.)

Mr. **D. R. Grenfell**: Is there any possibility that any advantage accruing to the producers will compensate for the disadvantage to public health generally by the retention of a high price for this very valuable medical substance?

Dr. **Burgin**: The whole question of insulin and its salts is, of course, receiving very careful consideration. A tribunal, deciding a purely legal question: Is this, or is this not, a fine chemical? has given a decision. The result is that a duty is automatically applied under the provisions of legislation going back to 1921. Obviously an opportunity must be given to consider the effects of that decision, but the undertaking that the price shall not be increased is a step in the right direction. Whether the price can be reduced is a matter that must be considered further and it shall be so considered.

Mr. **Grenfell**: Will the hon. gentleman promise the House that he will report on these considerations at a convenient date in the future?

Dr. **Burgin**: I will convey that suggestion to the President of the Board of Trade.

Sir **J. Haslam**: May we take it that the present Government are not responsible for this duty, as insinuated by certain interested people in the press? (Cries of "Oh.")

Dr. **Burgin**: That clearly results from what I have said. It was an Act of Parliament of 1921.

Sir **F. Fremantle**: Is there any assurance that there is a sufficient supply in quantity from the British manufacturers ?

Dr. BURGIN : We have no assurance but we have no reason to think that that is not the case.

Sir H. SAMUEL : Because this dates back to 1921, why should it be altered now in the absence of fresh legislation ?

Dr. BURGIN : That is a provision of an Act of Parliament. Under the Act of Parliament an interested party can apply to the committee for a decision. An interested party has applied to the committee and a decision has been given. The position must be reviewed in the light of that decision. I have told the House quite frankly that the position is being clearly borne in mind.

Petrol Fumes and Public Health

Mr. MCENTEE asked the Minister of Transport whether any steps were being taken by his department to safeguard the health of the drivers of motor vehicles against the danger arising from petrol fumes ; and whether he had any information in regard to the effect of petrol fumes on the general health of the public using the streets in the London area.—Lieut.-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) replied : As the hon. Member is aware, the possible effect of petrol fumes on the drivers and conductors of motor vehicles was considered incidentally by the departmental committee appointed by my right hon. friend, the Home Secretary, to inquire into industrial diseases. The second report of this committee has recently been issued. I do not think there is sufficient evidence of injury to the health of drivers of motor vehicles, or of other users of the road from exhaust fumes, to justify legislative action. Defects in exhaust pipes are looked for by the examiners in the examination of omnibuses and motor coaches, and similar defects in goods vehicles will come under the observation of examiners when occasion arises for the inspection of such vehicles under the provisions of the Road and Rail Traffic Act, 1933.

Mr. MCENTEE asked if any regular research was taking place into the question of the effect on the health of the public of these fumes, and whether the Minister had seen a statement issued by a number of highly qualified medical men that the fumes had a serious effect on the health of the public ?

Lieut.-Colonel HEADLAM said that the matter was under close observation. He had seen some suggestions by doctors, but they were very varied in their opinions.

Christmas Draws for Hospitals

Mr. RAIKES asked the Home Secretary whether he would instruct police action to be taken against the Christmas draw subscription fund in aid of the Gracie Fields' Orphanage endowment fund, and the grand Christmas draw in aid of the Invalid and Crippled Children's Society and Hospital, for contravention of the law against lotteries.—Sir J. GILMOUR replied : I have no authority to give directions to the police in this matter, but if an illegal public lottery comes to the notice of the Secretary of State it is, and has for a long time been, the practice to call the attention of the responsible chie
officer of police to it with a view to his considering the
question of proceedings. The two to which
my hon. friend refers have already t to the
notice of the police, and I understan roposed
to institute proceedings in both cases.

A Dangerous Industrial

Mr. THORNE asked the Home Secre er
of firms adopting the same manufact nt
recently discontinued by the British C at
Spondon, Derby, through the inter
ment ; and wl had issued a
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Workmen's Co —Sir J. G
This process was ich, so far
Department is a vely carrie
firm. The secon n acco
not arise. I will int f
light of the results as to
of the recent cases int

can only schedule a process under the Act with reference to a specified disease.

Recruiting Standard for the Army

Mr. GORDON MACDONALD asked the Financial Secretary to the War Office the minimum standard adopted for recruiting for the Regular Army ; also the number, along with the percentage, of youths that were rejected for physical reasons during the last 12 months for which figures were available, giving separate figures for each of the Lancashire Army divisions.—Mr. DUFF COOPER replied : During the recruiting year ended Sept. 30th, 1933, 37,509 persons were rejected for physical and medical reasons, representing 52·3 per cent. of the total number of persons served with notice papers. The corresponding figures for the West Lancashire recruiting zone were 4465 and 68·1 per cent. and for the East Lancashire zone 6169 and 72·5 per cent. The minimum height, weight, and chest measurements vary according to the age of the recruit and the corps which he wishes to join. In the case of the infantry of the line the minimum height is 5 ft. 4 in., the corresponding minimum weight (at 18 years of age) 115 lb., and the minimum chest measurement 33½ in.

TUESDAY, DEC. 12TH

Overcrowding in Scotland

Captain RAMSAY asked the Secretary of State for Scotland what was the estimated number of persons living in overcrowded conditions in Scotland ; and what was the estimated percentage of this number that would be affected in the next five years by schemes so far submitted by local authorities.—Mr. SKELTON (Under-Secretary of State for Scotland) replied : There is no general or statutory standard of overcrowding in Scotland. According to the Census Returns of 1931, however, there were 697,469 persons, or 14·9 per cent. of the population, living more than three persons to a room. As regards the latter part of the question, the programmes submitted by local authorities show the numbers of houses proposed to be erected to abate overcrowding without detailing the numbers of persons affected, and I regret therefore that the information asked for is not available.

Replying to Miss HORSBRUGH, Mr. SKELTON said that the programmes were not due for submission until the end of the month, but he understood that they were coming in very well.

Milk for School-children

Mr. GORDON MACDONALD asked the Parliamentary Secretary to the Board of Education the quantity of milk supplied to school-children by the Lancashire County Council, specifying the quantity of free milk, the number of children provided for, and the number receiving free milk in 1930, 1931, 1932, and up to the latest date for which figures are available in 1933.—Captain HUDSON (Lord of the Treasury) replied : Figures for the calendar years are not available. The figures for the financial years are as follows :—

ncial year March.	Number of pints of milk provided.	Number of individual children who received milk.
	228,976	1,525
	211,913	1,876
	394,717	2,916
Pe il 1st,		
1 31st,		
1		—*

* chil d milk under the Local
Edu s an uring the period from
April , 193 given, but the largest
numb one month was 2848
in Ap

All Education Authority
is ood that in addition
er the Education
area a voluntary
of milk to *children*
of the National
are available as to
under this scheme

PUBLIC HEALTH SERVICES

Medical Treatment of L.C.C. Hospital Staff

The practice of the M.A.B. was to provide out-patient treatment for its resident staff and such in-patient treatment as was available in the Board's hospitals. Sick officers did not make any payment for maintenance or for the attendance of the Board's ordinary medical staff, but made some contribution towards the fee of any specialist called in. Since the M.A.B. was merged in the L.C.C. its central public health committee have been considering general principles in dealing with the sick staff of all the institutions under its management. Their recommendations, made with the concurrence of the finance committee, may be briefly summarised thus. Staff actually resident shall receive free of charge in-patient treatment at any of the L.C.C. hospitals, and such out-patient treatment as can be provided at the particular hospital; but a medical superintendent would, however, be charged for his board. The consultant and specialist resources of the L.C.C. are available either in the hospital where the officer is employed or to which he is referred. Tuberculosis treatment is to be provided in accordance with the L.C.C. tuberculosis scheme. Treatment of any sick officer is to continue only so long as the medical superintendent considers that benefit is likely to come of it; free treatment does not include the provision of dentures, spectacles, or appliances, except such as are required during in-patient treatment.

Non-resident staff, on the other hand, are to be responsible for their own medical treatment, out-patient treatment being provided in cases in which the medical superintendent is of opinion that it would be to the Council's advantage. When the officer receives special treatment at an L.C.C. hospital, the public health committee has to consider the question of a contribution. In no case is the treatment provided to be construed as an admission of liability on the part of the L.C.C. or as a right to treatment.

Medical superintendents of general hospitals under the L.C.C. are authorised to act as the panel doctors of the resident insured staff in their respective hospitals, and a principal medical officer in the public health department is authorised to act as the nominal panel doctor for resident insured staff at the special L.C.C. hospitals.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 2ND, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 3 (last week 6); scarlet fever, 4013; diphtheria, 1449; enteric fever, 37; acute pneumonia (primary or influenzal), 981; puerperal fever, 46; puerperal pyrexia, 107; cerebro-spinal fever, 21; acute poliomyelitis, 8; acute polio-encephalitis, 2; encephalitis lethargica, 6; dysentery, 9; ophthalmia neonatorum, 76. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. 5th–6th was as follows: Small-pox, 11 under treatment, 2 under observation (last week 8 under treatment); scarlet fever, 3227; diphtheria, 2194; enteric fever, 17; measles, 489; whooping-cough, 168; puerperal fever, 15 mothers (no babies); encephalitis lethargica, 255; poliomyelitis, 6; "other diseases," 208. At St. Margaret's Hospital there were 10 babies (plus 4 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 20 (1) from measles, 14 (1) from scarlet fever, 6 (1) from whooping-cough, 49 (10) from diphtheria, 41 (11) from diarrhœa and enteritis under two years, and 59 (8) from influenza. The figures in parentheses are those for London itself.

Birkenhead and Bristol each reported 1 death from enteric fever. Manchester reported 5 deaths from measles, Barrow-in-Furness 4, Leeds 3. Of the fatal cases of diphtheria, 7 occurred at Leeds, 4 at Tottenham, 3 each at Hull and Leicester. Four deaths at Liverpool were attributed to influenza.

The number of stillbirths notified during the week was 263 (corresponding to a rate of 48 per 1000 total births), including 43 in London.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Dec. 19th.—5.30 p.m., General Meeting of Fellows.

Thursday.—5 p.m., Dermatology (Cases at 4 p.m.), Dr. H. MacCormac: (1) Pemphigus Vegetans; (2) Acute Rodent Ulcer. Dr. F. Parkes Weber and Dr. O. B. Bode: (3) Poikilodermia of the Face (Civattes Type) in a Girl aged 11½ Years. Dr. F. Parkes Weber: (4) Psoriasis Arthropathica in a Woman whose Twin Sister was Similarly Affected. Dr. J. E. M. Wigley and Dr. Gordon Heggs: (5) Urticaria Pigmentosa (with sections). 8.30 p.m., Neurology: Therapeutics and Pharmacology (Cases at 8 p.m.). Special Joint Discussion: Treatment of Subacute Combined Degeneration. Openers: Dr. E. A. Carmichael, Dr. C. C. Ungley, Prof. E. Mellanby, and Dr. William Sargant.

HUNTERIAN SOCIETY.

Monday, Dec. 18th.—8.30 p.m. (at Simpson's Restaurant, Bird-in-Hand-court, Cheapside), Dr. E. P. Poulton and Dr. C. W. Morris: Discussion on Therapeutic Uses of Oxygen. Preceded by dinner at 7.15 p.m.

CHELSEA CLINICAL SOCIETY.

Tuesday, Dec. 19th.—7.30 p.m., Dinner at the Hotel Rembrandt, Thurloe-place, S.W., followed by Discussion on Hypnotic Suggestion, to be opened by Dr. A. G. Buchanan (with demonstration).

NORTH-WEST LONDON MEDICAL SOCIETY.

Tuesday, Dec. 19th.—9 p.m. (at the Regal Rooms, Finchley-road, N.W.), Mr. R. Y. Paton: The Painful Back.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

Tuesday, Dec. 19th.—3.15 p.m., Mr. Eugene Wolff: Iritis.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

Tuesday, Dec. 19th.—5 p.m., Dr. H. Corsi: Diseases of the Nails.

Wednesday.—5 p.m., Dr. I. Muende: Histopathology of the Chronic Infective Granulomata of the Skin.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

Tuesday, Dec. 19th.—11.30 a.m., Dr. W. W. Payne: Treatment of Diabetic Coma.

Wednesday.—9.30 a.m., Skin Clinic. 2 p.m., Dental Clinic.

Thursday.—2 p.m., Tonsils, Adenoids, and Anæsthesia.

Saturday.—9.30 a.m., Eye Clinic.

Medical and Surgical Out-patient Clinics: daily from Mond. to Sat., 10 a.m. to 12 noon. Medical Wards: mornings, 10 a.m., Mond., Wed., Thurs., and Sat.; afternoons, 2 p.m., Mond., Tues., Thurs., and Frid. Surgical Wards: Tues., Thurs., Frid. mornings, and Wed. afternoon.

LEEDS GENERAL INFIRMARY.

Tuesday, Dec. 19th.—4 p.m., Dr. Bibby: Demonstration of Cases.

A Mental Defectives' Colony in Surrey.—The Surrey county council recently approved of a scheme for the establishment of a colony for 1200 mental defectives on the Botley's Park Estate, Chertsey. Eventually the colony will accommodate 1500 patients. Botley's Park was purchased in 1929 for £31,000 with the intention of using it for this purpose. It is calculated that by 1937 the county's mental hospitals will be full and that this building will then be urgently needed.

is a sufficient supply in quantity from the British manufacturers ?

Dr. Burgin: We have no assurance but we have no reason to think that that is not the case.

Sir H. Samuel: Because this dates back to 1921, why should it be altered now in the absence of fresh legislation ?

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A Dangerous Industrial Process

Mr. Thorne asked the Home Secretary the number of firms adopting the same manufacturing process as that recently discontinued by the British Celanese works at Spondon, Derby, through the intervention of his department; and whether he had issued a warning to these firms of the risks of continuing such a process or whether he had yet considered registering the process under the Workmen's Compensation Act.—Sir J. Gilmour replied: This process was a peculiar one which, so far as the Factory Department is aware, was exclusively carried on by this firm. The second part of the question accordingly does not arise. I will consider the third point further in the light of the results of the investigations as to the nature of the recent cases of illness: I would point out that I can only schedule a process under the Act with reference to a specified disease.

Recruiting Standard for the Army

Mr. Gordon Macdonald asked the Financial Secretary to the War Office the minimum standard adopted for recruiting for the Regular Army; also the number, along with the percentage, of youths that were rejected for physical reasons during the last 12 months for which figures were available, giving separate figures for each of the Lancashire Army divisions.—Mr. Duff Cooper replied: During the recruiting year ended Sept. 30th, 1933, 37,509 persons were rejected for physical and medical reasons, representing 52·3 per cent. of the total number of persons served with notice papers. The corresponding figures for the West Lancashire recruiting zone were 4465 and 68·1 per cent. and for the East Lancashire zone 6169 and 72·5 per cent. The minimum height, weight, and chest measurements vary according to the age of the recruit and the corps which he wishes to join. In the case of the infantry of the line the minimum height is 5 ft. 4 in., the corresponding minimum weight (at 18 years of age) 115 lb., and the minimum chest measurement 33½ in.

TUESDAY, DEC. 12TH

Overcrowding in Scotland

Captain Ramsay asked the Secretary of State for Scotland what was the estimated number of persons living in overcrowded conditions in Scotland; and what was the estimated percentage of this number that would be affected in the next five years by schemes so far submitted by local authorities.—Mr. Skelton (Under-Secretary of State for Scotland) replied: There is no general or statutory standard of overcrowding in Scotland. According to the Census Returns of 1931, however, there were 697,469 persons, or 14·9 per cent. of the population, living more than three persons to a room. As regards the latter part of the question, the programmes submitted by local authorities show the numbers of houses proposed to be erected to abate overcrowding without detailing the numbers of persons affected, and I regret therefore that the information asked for is not available.

Replying to Miss Horsbrugh, Mr. Skelton said that the programmes were not due for submission until the end of the month, but he understood that they were coming in very well.

Milk for School-children

Mr. Gordon Macdonald asked the Parliamentary Secretary to the Board of Education the quantity of milk supplied to school-children by the Lancashire County Council, specifying the quantity of free milk, the number of children provided for, and the number receiving free milk in 1930, 1931, 1932, and up to the latest date for which figures are available in 1933.—Captain Hudson (Lord of the Treasury) replied: Figures for the calendar years are not available. The figures for the financial years are as follows:—

Financial year ended 31st March.	Number of pints of milk provided.	Number of individual children who received milk.
1931	228,976	1,525
1932	211,913	1,876
1933	394,717	2,916
Period from April 1st, 1933, to Oct. 31st, 1933	305,542	—*

* The number of children who received milk under the Local Education Authority's arrangements during the period from April 1st to Oct. 31st, 1933, cannot be given, but the largest number of children receiving milk in any one month was 2818 in April, 1933.

All the milk provided by the Local Education Authority is given free of charge. It is understood that in addition to the authority's arrangements under the Education Act, 1921, there is in operation in the area a voluntary self-supporting scheme for the supply of milk to children on payment, conducted under the auspices of the National Milk Publicity Council. No figures are available as to the number of children receiving milk under this scheme or the quantity of milk provided.

PUBLIC HEALTH SERVICES

Medical Treatment of L.C.C. Hospital Staff

[illegible]

[illegible]

[illegible] the special L.C.C. hospital.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 2ND, 1933

Notifications.—The following cases of infectious disease were notified during the week: Smallpox, [illegible] (last week [illegible]); scarlet fever, [illegible]; diphtheria, [illegible]; enteric fever, 67; acute pneumonia (primary or influenzal), [illegible]; puerperal fever, [illegible]; puerperal pyrexia, [illegible]; cerebro-spinal fever, 21; acute poliomyelitis, [illegible]; acute polio-encephalitis, 2; encephalitis lethargica, [illegible]; dysentery, [illegible]; ophthalmia neonatorum, [illegible]. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. [illegible] was as follows: Smallpox, 11 under treatment, 2 under observation (last week [illegible] under treatment, [illegible]); scarlet fever, [illegible]; diphtheria, [illegible]; enteric fever, 17; measles, [illegible]; whooping-cough, [illegible]; puerperal fever, 15 mothers (plus [illegible] babies); encephalitis lethargica, [illegible]; poliomyelitis, [illegible]; "other diseases," [illegible]. At St. Margaret's Hospital there were [illegible] babies (plus 4 mothers) with ophthalmia neonatorum.

[illegible]

[illegible]

[illegible]

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

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NORTH-WEST LONDON MEDICAL SOCIETY.

[illegible]

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL NORTHERN HOSPITAL, [illegible], N.

[illegible]

LONDON SCHOOL OF DERMATOLOGY, [illegible]

[illegible]

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

[illegible]

LEEDS GENERAL INFIRMARY.

[illegible]

A Mental Defectives' Colony in Surrey.—The Surrey county council recently approved of a scheme for the establishment of a colony for [illegible] mental defectives on the Botley's Park Estate, Chertsey. Eventually the colony will accommodate [illegible] patients. Botley's Park was purchased in [illegible] for £[illegible] with the intention of using it for this purpose. It is calculated that by 1937 the county's mental hospitals will be full and that this building will then be urgently needed.

is a sufficient supply in quantity from the Bri manufacturers ?

Dr. BURGIN: We have no assurance but we have reason to think that that is not the case.

Sir H. SAMUEL: Because this dates back to 1921, w should it be altered now in the absence of fr legislation ?

Dr. BURGIN: That is a provision of an Act of Parliame Under the Act of Parliament an interested party c apply to the committee for a decision. An interest party has applied to the committee and a decision h been given. The position must be reviewed in the lig of that decision. I have told the House quite frankl that the position is being clearly borne in mind.

Petrol Fumes and Public Health

Mr. McENTEE asked the Minister of Transport whether any steps were being taken by his department to safeguard the health of the drivers of motor vehicles against the danger arising from petrol fumes; and whether he had any information in regard to the effect of petrol fumes on the general health of the public using the streets in the London area.—Lieut.-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) replied: As the hon. Member is aware, the possible effect of petrol fumes on the drivers and conductors of motor vehicles was considered incidentally by the departmental committee appointed by my right hon. friend, the Home Secretary, to inquire into industrial diseases. The second report of this committee has recently been issued. I do not think there is sufficient evidence of injury to the health of drivers of motor vehicles, or of other users of the road from exhaust fumes, to justify legislative action. Defects in exhaust pipes are looked for by the examiners in the examination of omnibuses and motor coaches, and similar defects in goods vehicles will come under the observation of examiners when occasion arises for the inspection of such vehicles under the provisions of the Road and Rail Traffic Act, 1933.

Mr. McENTEE asked if any regular research was taking place into the question of the effect on the health of the public of these fumes, and whether the Minister had seen a statement issued by a number of highly qualified medical men that the fumes had a serious effect on the health of the public ?

Lieut.-Colonel HEADLAM said that the matter was under close observation. He had seen some suggestions by doctors, but they were very varied in their opinions.

Christmas Draws for Hospitals

Mr. RAIKES asked the Home Secretary whether he would instruct police action to be taken against the Christmas draw subscription fund in aid of the Gracie Fields' Orphanage endowment fund, and the grand Christmas draw in aid of the Invalid and Crippled Children's Society and Hospital, for contravention of the law against lotteries.—Sir J. GILMOUR replied: I have no authority to give directions to the police in this matter, but if an illegal public lottery comes to the notice of the Secretary of State it is, and has for a long time been, the practice to call the attention of the responsible chie officer of police to it with a view to his considering the question of proceedings. The two schemes to which my hon. friend refers have already been brought to the notice of the police, and I understand that it is proposed to institute proceedings in both cases.

A Dangerous Industrial Process

Mr. THORNE asked the Home Secretary the number of firms adopting the same manufacturing process as that recently discontinued by the British Celanese works at Spondon, Derby, through the intervention of his department; and whether he had issued a warning to these firms of the risks of continuing such a process or whether he had yet considered registering the process under the Workmen's Compensation Act.—Sir J. GILMOUR replied: This process was a peculiar one which, so far as the Factory Department is aware, was exclusively carried on by this firm. The second part of the question accordingly does not arise. I will consider the third point further in the light of the results of the investigations as to the nature of the recent cases of illness: I would point out that I

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SERIES. No. 54—ANCIENT EGYPTIAN

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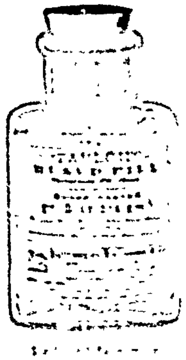

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00 B.C. COPYRIGHT

Education, has collected an immense number of nursery rhymes and given them an index of titles. The publishers make them very easy to read and the book is a convenient work of reference for the nursery. But it must be admitted that most of the rhymes, if they are to come to life, need the musical or dramatic intervention of a well-informed nurse or mother. Some in fact, with origins far away in distant symbolism, are so obscure that it is hard to see how they have survived at all. Perhaps, on the other hand, the symbolism makes a universal, if unconscious, appeal; so that London children, for whom this anthology is intended, are linked through their responses with those of rural England long ago.

MOODS AND TENSES.—Dr. Harvey's stories [5] deserve to be better known. The first of this series, the Double Eye, describes the unhappy case of a man whose eyes saw different things. "The single-minded man may laugh and be cheerful but it's not often that he has a sense of humour. He lacks stereoscopic vision. Both eyes see from the same angle instead of from a slightly different angle. Probably the first time that Adam laughed was when he sat munching the apple and was conscious of good and evil at the same time." Dr. Harvey's friend, who is supposed to have written the stories which follow, developed a definite and somewhat sinister diplopia, and his tales vary accordingly from grim to gay. Both eyes see further than most of us, and their impressions are recorded very skilfully. The book is full of charming conversation, and when murder is meditated there is an appropriate lightness of touch. "George Cranstoun remembered the pictures he had seen of methods of rescuing the drowning. The method that appealed to him most was that in which the rescuer, swimming on his back, supported the head of the drowning person with his hands and held it just above the level of the water. In this case it would be just below."

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[5] Moods and Tenses. By William Fryer Harvey. Oxford: Basil Blackwell. 1933. Pp. 224. 5*s*.

Appointments

FITZGERALD, W. E., M.B., Ch.B. Edin., D.P.H., has been appointed Medical Officer of Health and School Medical Officer, Southport.

FORTY, F., M.B., B.S. Lond., F.R.C.S. Eng., Resident Surgical Officer, General Hospital, Birmingham.

JONES, A. TREVOR, M.D., B.S. Lond., D.P.H., Medical Officer of Health, Carmarthen.

Queen Charlotte's Maternity Hospital: BUDDEE, F. W., M.B., Ch.M. Syd., Senior Resident Medical Officer; SUGDEN, E. C., M.B., Ch.B. Camb., Assistant Resident Medical Officer; EVANS, HELEN M., M.R.C.S., L.R.C.P. Lond., and FURLONG, BERYL M., M.B., B.S. Lond., Resident Anæsthetists.

London County Council Hospital Staff.—The following appointments, promotions, and transfers are announced. A.M.O. (I.) and (II.) = Assistant Medical Officer, Grades I. and II.

ROBINSON, N. H., M.D. Melb., F.R.C.S. Eng., A.M.O. (I.), St. James'.

GORE, J., M.B. Birm., F.R.C.S., A.M.O. (I.), St. Giles'.

BROWN, J., M.B. Edin., F.R.C.S. Edin., A.M.O. (I.). St. Olave's.

FERRIMAN, D. G., B.M. Oxf., A.M.O. (II.), St. Pancras.

SMITH, D. B., M.D. Toronto, A.M.O. (II.), St. George-in-the-East.

PORTEOUS, R., M.B. Edin., A.M.O. (II.), Constance-road Institution.

KAHAN, A., M.B. Lond., A.M.O. (II.), Queen Mary's, Sidcup.

JOHNSON, W. A., M.R.C.S., House Physician, St. James'.

Certifying Surgeons under the Factory and Workshop Acts: MONTGOMERY, G. N., L.R.C.P. Lond., M.R.C.S. (Bicester, Oxford); PRINGLE, A. F., M.B., Ch.B. Aberd. (Lerwick, Shetland).

Vacancies

For further information refer to the advertisement columns

Ashton-under-Lyne, District Infirmary.—H.S. At rate of £150.

Bolton Royal Infirmary.—H.P. £200.

Brighton, Royal Alexandra Hospital for Sick Children.—H.P. £100.

Bristol General Hospital.—H.P.'s., H.S.'s, &c. At rate of £80. Also Cas. H.S. At rate of £100.

City of London Hospital for Diseases of the Heart and Lungs.—Anæsthetist.

Croydon General Hospital.—Hon. Anæsthetist.

Harrogate, Royal Bath Hospital.—Res. M.O. At rate of £156.

Hertford County Hospital.—H.S. At rate of £200.

Hospital of St. John and St. Elizabeth, 60, Grove End-road, N.W.—Res. H.P. At rate of £100.

Huddersfield Royal Infirmary.—Res. Surg. O. £225–£250.

Hull Royal Infirmary.—H.S. to Sutton Branch Hospital. At rate of £160.

Ilford, Kir At rate of £100.

Lincoln Cc At rate of £150.

Liverpool *and Diseases of the Chest,* *Moun*

London Hc

Macclesfield General Infirmary.—Second H.S. £150.

Maidstone, West Kent General Hospital.—H.P. and H.S. Each £150.

Manchester Ear Hospital, Grosvenor-square, All Saints.—Res. H.S. £120.

National Temperance Hospital, Hampstead-road, N.W.—Hon. Asst. Physician. Also Hon. Asst. Aural Surgeon.

Nelson Hospital, Merton, S.W.—Res. H.S. At rate of £100.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Two Res. Anæsthetists. Each at rate of £100. Also H.P.'s and H.S.'s to Spec. Depts. Each at rate of £50. Also 2 H.S.'s to Leazes Hospital. Each at rate of £50.

North Middlesex County Hospital.—Jun. Res. Asst. M.O. £250.

Nottingham Children's Hospital.—Res. H.S. At rate of £150.

Portsmouth Royal Hospital.—H.P. At rate of £130.

Preston and County of Lancaster Royal Infirmary.—H.S. Also Special H.S. Each £150.

Prince of Wales's General Hospital, N.—Hon. Clin. Assts. for Spec. Depts.

Queen's Hospital for Children, Hackney-road, E.—Physician for Skin Dept.

Rochester, St. Bartholomew's Hospital.—H.S. At rate of £175.

Royal Free Hospital, Gray's Inn-road, W.C.—Res. Cas. O. At rate of £150.

Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Clin. Asst. for Ophth. Dept.

St. Thomas's Hospital.—Med. Reg. to Children's Dept. Also Surg. Reg. and Tutor.

Salford Royal Hospital.—Hon. Ophth. Surgeon.

Sheffield Royal Infirmary.—Two H.S.'s, H.P., Ophth. H.S., Asst. Cas. O., and Asst. Aural and Ophth. H.S. Each at rate of £80.

Sheffield, Winter Street Hospital.—Asst. Tuber. O. £30.

Southport County Borough.—Deputy M.O.H. and School M.O. £600.

Stoke-on-Trent, North Staffordshire Royal Infirmary.—Orthopædic H.S. £150.

Surrey County Mental Hospital Service.—Jun. Asst. M.O. £350.

Taunton, Taunton and Somerset Hospital.—H.P. £100.

University College Hospital, Gower-street, W.C.—Ophth. Reg. £100.

Wakefield Mental Hospital.—Med. Supt. £1200.

West London Hospital, Hammersmith, W.—Res. Anæsthetist. At rate of £100.

Wolverhampton and Midland Counties Eye Infirmary.—H.S. £150.

Woolwich and District War Memorial Hospital, Shooter's-hill, S.E. H.P. and H.S. Each at rate of £100.

York, The Retreat.—Sen. Asst. M.O. £400.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Rainham, Essex.

Births, Marriages, and Deaths

BIRTHS

BARNARD.—On Dec. 4th, at "Aboyne," Sidcup, the wife of J. N. Barnard, M.B., B.S., of a son.

BUNCOMBE.—On Dec. 7th, at a nursing-home, Norwich, the wife of Dr. G. H. Buncombe, Gorleston, Suffolk, of a son.

COOPER.—On Dec. 5th, 1933, at Hillcrest Cottage, Weeping Cross, near Stafford, to Ruth Mildred (née Evans), the wife of Thomas Valentine Cooper—a daughter.

MARRIAGES

NEWSOM—CLAY.—On Nov. 29th, at Christ Church, Lancaster-gate, Robert Augustus Newsom, M.R.C.S., L.R.C.P., to Eleanor, daughter of the late Bertram Clay, I.C.S., and of Mrs. Galvin.

DEATHS

EARLE.—On Dec. 4th, at Woodstock-road, Oxford, John Rolleston Earle, M.A., M.B., aged 69.

LODGE.—On Dec. 5th, at Harrogate, Samuel Durham Lodge, F.R.C.S., of the Drive, Roundhay, and "Creskeld," Greystoke, Cumberland.

ROWLANDS.—On Dec. 7th, at Wimpole-street, W., very suddenly, of heart failure, Robert Pugh Rowlands, O.B.E., M.S., F.R.C.S., Senior Surgeon of Guy's Hospital.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

MENTAL HOSPITAL APPOINTMENTS IN YORKSHIRE.—The West Riding hospitals board have appointed Dr. Arthur Pool, deputy medical superintendent and senior assistant physician at the Retreat, York, to be medical superintendent at Wadsley; and Dr. R. C. Walker, deputy medical superintendent at Menston, to be senior medical superintendent at the same institution.

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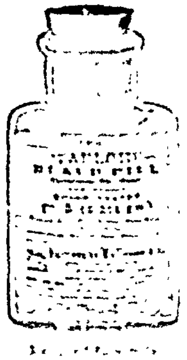

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ANCIENT EGYPTIAN IN THE ATTITUDE OF PRAYER.—Not only is there clear evidence that the Egyptians prayed for the cure of their diseases, but there exists also very striking testimony to a lofty ideal of personal religion, which must have favoured healing through the practice of auto-suggestion, albeit unconscious. In peaceful communion with his god (a great advance upon the ritual prayers and dull repetitions of early times), the later Egyptian allayed his anxieties and believed, in quiet faith, that his prayer would be granted: "As the herdsman leads the herds to pasture, so dost thou, O Amen, lead the suffering to good, for Amen is a herdsman, herding him that leans upon him . . . O Amen Rā, I love thee and I have filled my heart with thee . . . Thou wilt rescue me . . . I will not follow the anxiety in my heart, for that which Amen hath said, flourisheth." Prayers were often recited into incense smoke, for it was believed that they were thus wafted to the ears of the god. DATE: c. 1400 B.C.

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IN ADDISON'S DISEASE

and related conditions

Extracted from an opening paper, Clinical Meeting of the Royal Society of Medicine, Lancet, Dec. 16, 1933:

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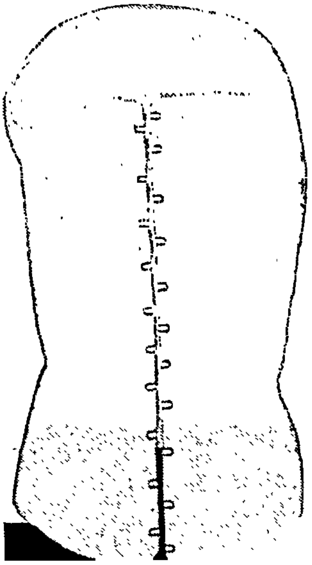

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ADDRESSES AND ORIGINAL ARTICLES

ELECTROSURGERY

By Arthur H. Burgess, M.Sc. Vict., F.R.C.S. Eng., F.A.C.S. (Hon.), LL.D.

HONORARY SURGEON TO THE MANCHESTER ROYAL INFIRMARY; PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF MANCHESTER

(Concluded from p. 1332)

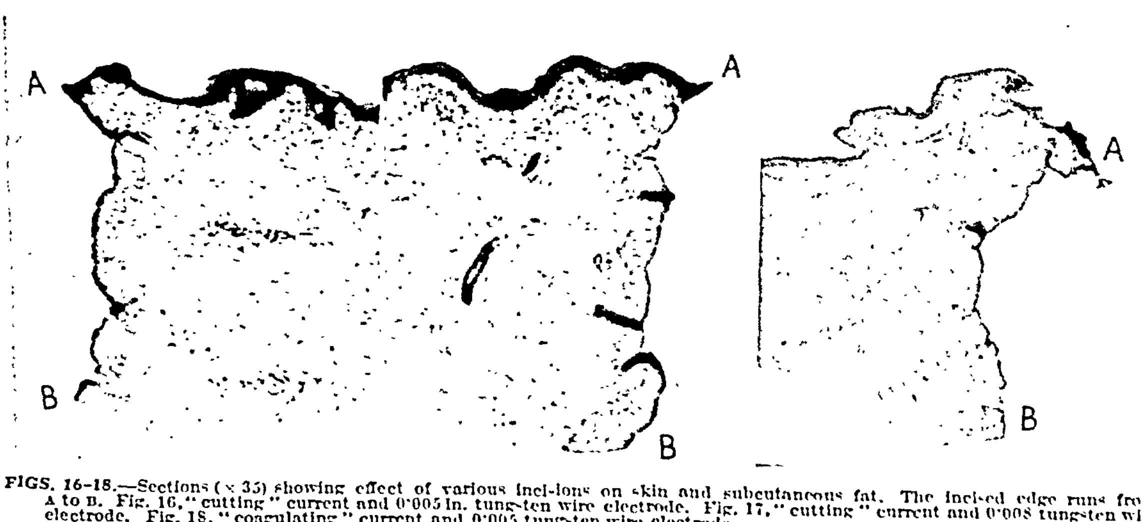
Rate of Healing

Provided that an equally rigid aseptic technique be adopted as is employed in scalpel surgery, my experience is that operations performed by electrosurgical methods – the cutting current for the incisional work and the coagulating current for all but the largest vessels, and using fine tungsten wire as the electrode – are attended by primary healing with a frequency at least equal to that of scalpel surgery. On theoretical grounds one would expect healing to be rather slower since, with the cutting current, there must necessarily be some slight necrosis of the wound surface, however microscopic, which will require to be dealt with by the phagocytes as a preliminary step towards healing. I, therefore, usually retain the skin sutures two or three days longer than when scalpel surgery has been used, though I am not convinced that this is essential. The ultimate scar can be just as inconspicuous, as supple and as strong as after the scalpel, and some of the scars upon the face and neck of female patients, of the inconspicuousness of which I, and they too, are most proud, have resulted solely from electrosection.

Experimental investigations upon animals have yielded rather inconstant results. Ellis[3] operating with the cutting current upon 120 dogs, under ether anæsthesia, with aseptic technique, and with scalpel incisions as control found that incisions in the muscles or in the muscular wall of the stomach healed just as readily and as strongly when made with the cutting current as with the scalpel. Of the skin incisions, however, only 60 per cent. of those electrically produced healed by primary union as against 97·5 per cent. in the control scalpel wounds, and even when primary union did occur the tensile strength of the former was rather less during the early period of healing, and did not equal that of the latter until the 24th day. He attributes the difference in healing between muscle and skin to the relatively high electrical resistance of the stratum corneum, to penetrate which needs such a density of current as necessarily to produce some coagulation of the lesser resistant layers of the skin, thus delaying the healing process. Pearce and Ward,[4] also experimenting with dogs under ether anæsthesia, and with strict surgical asepsis, found that electrosurgical incisions and partial excisions can be executed upon the liver and kidney with only slight primary hæmorrhage, without any secondary hæmorrhage in the absence of infection, and with uneventful healing, although the scarring was usually more extensive than after the scalpel. Beverley Chew Smith[5] in a series of animal experiments and clinical observations found that union in electrically made wounds is no less firm than in scalpel incisions, and Labert et al.[6] come to a similar conclusion and consider that an electrically made wound is more likely to be aseptic than one made with the knife.

The mechanism of the cutting effect of the high-frequency current is not precisely known. Jellinek[7] considers that it is merely a thermal effect, the rapid conversion of the liquid contents of the cell into steam, with its consequent sudden expansion, actually bursting the cell, while Oudin[8] ascribes it to the assumption by the atoms of the tissues of a new rate of vibration, thus leading to their molecular destruction. When the active electrode approaches the skin very closely a minute spark, readily visible in the dark, passes between the point of the electrode and the skin; the electrode and the tissues act, in fact, as plates of a condenser and the intervening short air-space as the spark-gap.[9] This sparking occurs whether the electrode is fed with the cutting (undamped) or the coagulating (damped) current. In the former event, however, the spark, as seen in an instantaneous photograph, is a compact narrow pencil of flame whose action is strictly localised, whereas in the latter it is a broad spray irregularly distributed over a wide area of the tissues. This difference in the character of the spark is to be

Figs. 16 17 18



FIGS. 16–18.—Sections (× 35) showing effect of various incisions on skin and subcutaneous fat. The incised edge runs from A to B. Fig. 16, "cutting" current and 0·005 in. tungsten wire electrode. Fig. 17, "cutting" current and 0·008 tungsten wire electrode. Fig. 18, "coagulating" current and 0·005 tungsten wire electrode.

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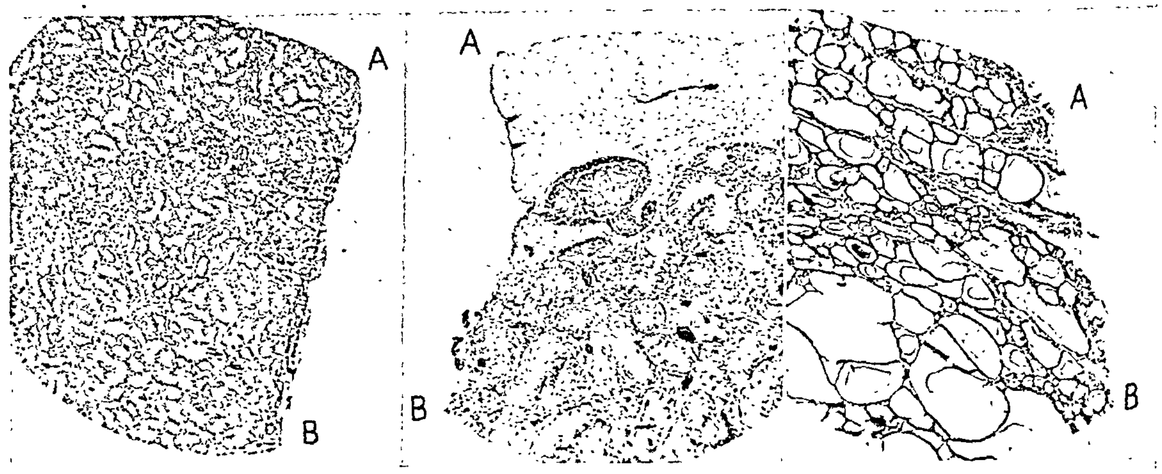
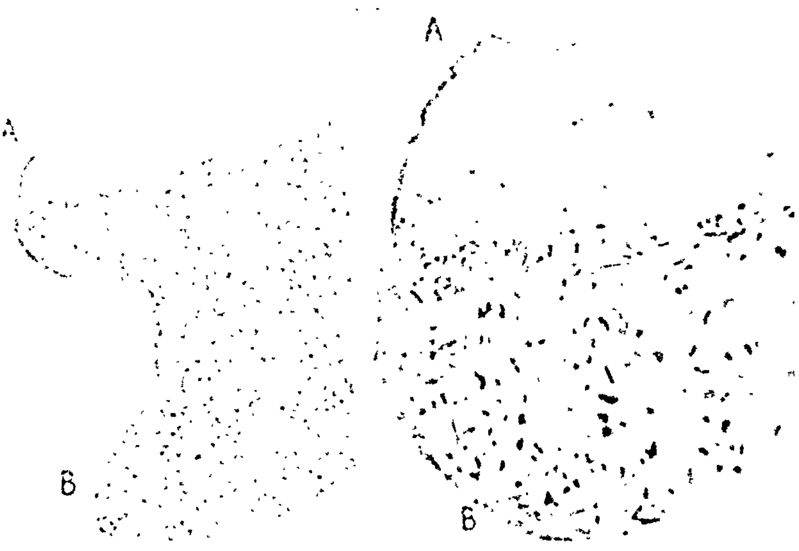
FIGS. 21 22 23



FIGS. 21–23.—Sections (× 35) showing effect of incision with "cutting" current and 0·005 tungsten wire electrode. Fig. 21, kidney. Fig. 22, testis. Fig. 23, thyroid.

FIG. 19 20



FIGS. 19 and 20.—[illegible] electrode. Fig. 19 [illegible]; Fig. 20 [illegible].

Some high-frequency machines deliver a current which is a compromise between the purely cutting and coagulating currents, and with these hæmorrhage is undoubtedly less, but only because of the greater degree of coagulation produced over the entire wound surface, with its consequent lesser probability of perfect primary union.

There is no doubt that shock is definitely less with electrosection, partly from the diminished afferent impulses due to the sealing up of divided nerve-fibres, partly from the slight diminution in hæmorrhage, and partly from the increased temperature of the severed tissues—an effect readily appreciated in the radical breast operation, where the pectoral muscles feel quite hot even to the rubber-gloved hand. The sealing of blood-vessels by running the current along an artery-forceps temporarily applied thereto, in place of using ligatures, may lead in a large wound to a considerable saving not only in time but also in expense, particularly if the surgeon be one who uses catgut alone for ligature material; moreover, the lesser amount of foreign body thus left behind is conducive to better wound healing. Owing to the intense heat developed at the point of the electrode a wound made by electrosection is more likely to be aseptic than if made with a scalpel, and Howard Kelly[10] considers that in wound left unsutured healing is more rapid than in the average surgical case; less scar tissue is formed and the resultant scar is softer and more pliable and has less tendency to contract. Anderson[11] whose brilliant pioneer work in the electrosurgery of the breast is well known, is assured by his anæsthetist that a very much lighter anæsthesia suffices than for the scalpel operation, and my anæsthetist confirms this.

The *disadvantages* of electrosurgery are that high-frequency machines of sufficient power to prove effective in all branches of surgical work are cumbersome and difficult of transport, and at present are undoubtedly expensive initially, though not in their running costs. Some considerable period of training is required for their effective use since a very different touch is needed than for scalpel surgery. Also, ether, acetylene, or other similar explosive anæsthetic cannot be employed in operations upon the head or neck.

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Undoubtedly the most important indication for electrosurgery is to replace the scalpel in operations for the removal of malignant growths, whether of the skin or of the deeper tissues or organs: here, by sealing off divided lymphatic vessels and destroying exposed cancer cells, it minimises the chances of local recurrence. The radical removal of breast carcinoma by electrosurgical methods has been well described by Anderson[11] and by Lowry,[12] and may be taken as a type for similar operations elsewhere in malignant disease.

On the introduction of Harvey Cushing, electrosurgical methods have now been adopted in all neurosurgical clinics. My colleague, Geoffrey Jefferson, finds the tungsten wire loop electrode invaluable in looping out the central portions of brain tumours with the cutting current and so permitting the ready withdrawal of their periphery; the application of the bipolar electrodes to vascular tumours immediately prior to their removal minimises hæmorrhage. Superficial vessels can be obliterated by stroking with a weak coagulating current, and the use of silver clips largely obviated. In cerebellar operations and in laminectomy the separation of the muscles from bone is more easily performed with the cutting electrode than with the knife.

The surgery of non-malignant conditions opens up a wide field for electrosurgery, and I have employed electrosection in most of the operations that fall to the lot of a surgeon to a large general hospital. The time at my disposal does not permit reference to more than a few examples. All operations in which incisions have to be made into tissues already infected are more safely undertaken with electrosection than with the scalpel. With the exception of the division of the bone every step of an amputation can be performed with electrosection, the main vessels alone requiring ligature; perfect primary union can result with much less tendency to a painful stump. In dividing the abdominal wall during paramedian laparotomy, after division of the skin the current requires to be increased considerably for the severance of the subcutaneous fat, and afterwards reduced for that of the anterior sheath of the rectus so as to avoid inconvenient contractions of the underlying muscle; the inner edge of the rectus is then retracted outwards and the peritoneum, picked up with two Spencer-Wells forceps applied transversely, is divided between them in a vertical direction sufficiently to admit two fingers of the left hand; these raise the peritoneum away from the viscera and permit of its safe and rapid electrosection for the full extent of the wound. All incisions of the hollow viscera—in resections, anastomoses, "-ostomies," and local excisions of ulcers or growths—are made with the electrosector, as are partial excisions of the solid viscera—liver, spleen, pancreas, kidney—while with

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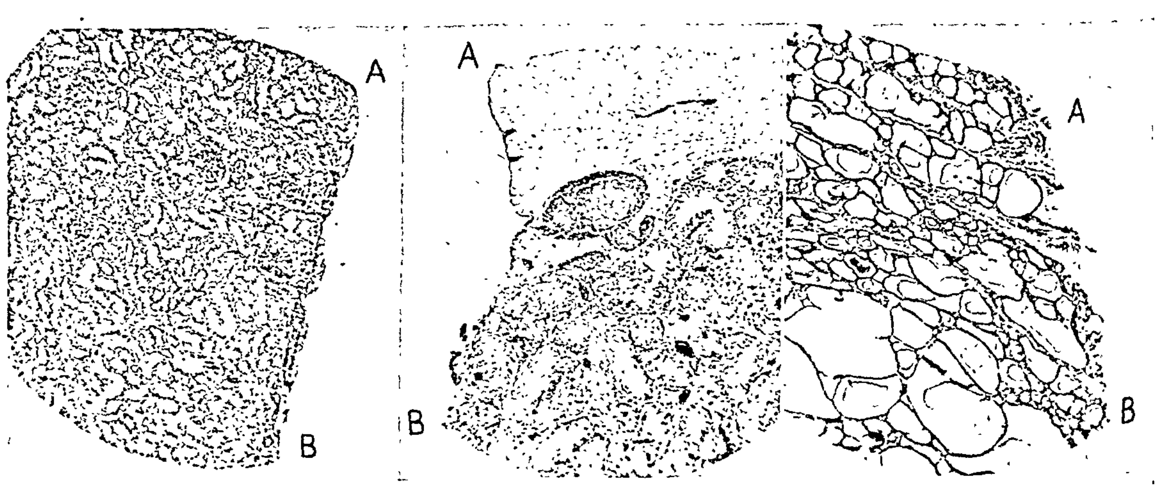

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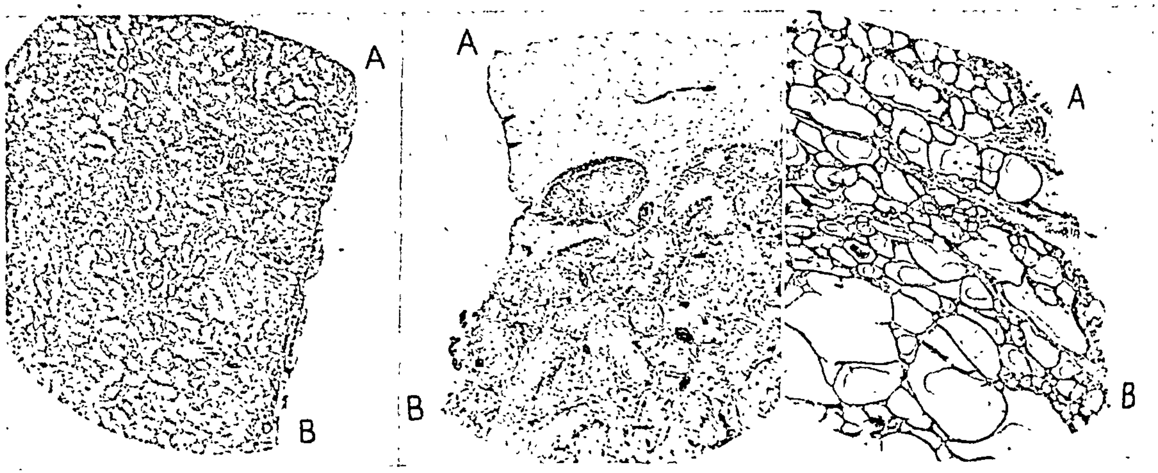

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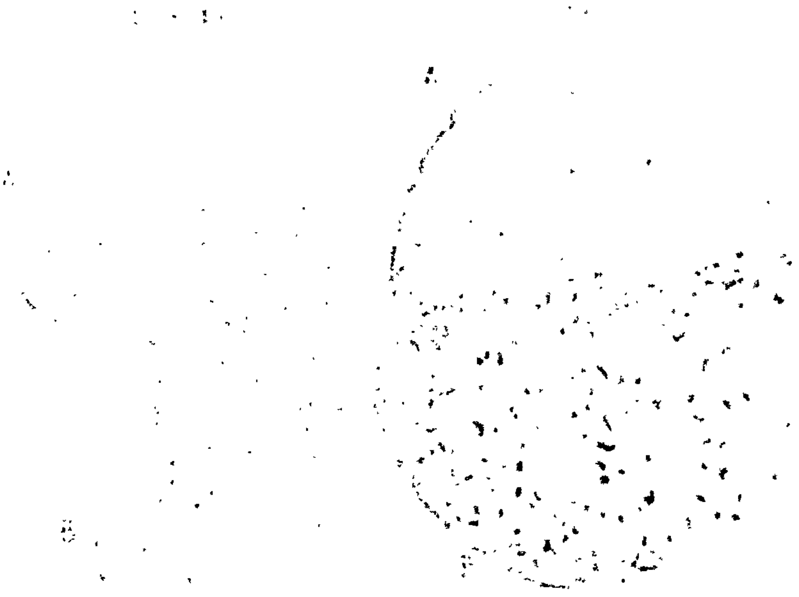

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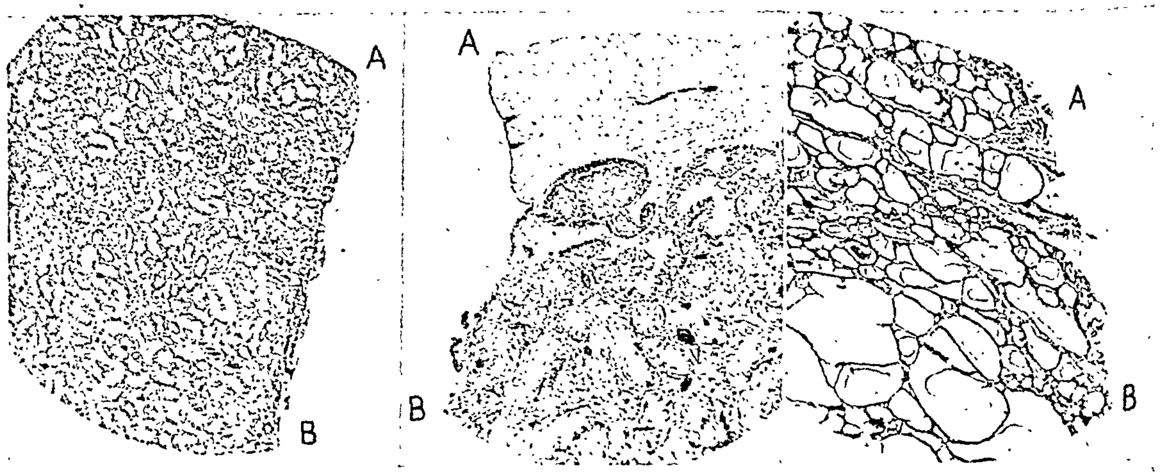

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In suprapubic prostatectomy by the "open" method the mucosa can be readily incised with the electrosector in circular fashion around the vesical orifice of the urethra before commencing enucleation, thus leaving a smooth mucosal edge instead of a torn and ragged one; with it the "prostatic shelf" can be divided or, better still, a V-shaped portion removed therefrom, while the coagulating current can be easily applied to any bleeding point in the prostatic bed. In the per-urethral resection of the prostate with the McCarthy prostatic electrotome or one of its modifications, if the cutting current from a triode valve apparatus be employed the loop must be drawn through the projecting prostatic tissue more slowly than when incising skin owing to the comparatively slight coagulating action of the undamped wave current; otherwise the oozing of blood from the raw prostatic surface exposed may prove rather troublesome.

In thyroid gland surgery, particularly in the presence of hyperthyroidism, the electrosector can replace the scalpel throughout. Division of the skin with the very fine (0·005) tungsten wire as the active electrode can, I am convinced, leave a scar at least as inconspicuous as that after scalpel incision. The gland tissue can be readily severed and any spurting vessels coagulated, while it is sometimes preferable to scoop out with the tungsten wire loop as the active electrode the main mass of each lateral lobe, carefully avoiding the vicinity of the recurrent laryngeal nerves; this leaves a mere shell of thyroid tissue, and the cavity thus remaining can be obliterated by catgut suture.

It is in the electrosurgical treatment of such minor affections of the anal canal as polypi, fissures, fistulæ, and hæmorrhoids that is noticeable more markedly, perhaps, than elsewhere the remarkable diminution in post-operative pain as compared with that after the more usual surgical procedures; its application is here invaluable.

Finally, from the point of view of the surgeon himself, electrosection will revive his interest in surgical procedures which, owing to the systematisation and standardisation of their technique, have become almost monotonous in their performance: even such simple operations as the excision of a sebaceous cyst or of a chronically inflamed bursa acquire, with electrosurgery, a fascination of their own. Moreover, electrosurgery is but in its infancy, and there is every reason to hope that considerable advances will be forthcoming in the near future—possibly even the replacement of suture of the tissues in some cases by a process of electric welding analogous to that now utilised in connexion with metals. Be that as it may, the more I see of electrosurgery the less inclined I am to concur in that dictum of the most famous of living British surgeons that "the craft of surgery has almost reached its limitations." *

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LATE RESULTS OF TREATMENT BY ARTIFICIAL PNEUMOTHORAX

By L. S. T. Burrell, M.D. Camb., F.R.C.P. Lond.

PHYSICIAN TO THE ROYAL FREE HOSPITAL AND TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST

In 1924 I published in The Lancet[1] an account of 250 patients on whom I had induced or attempted to induce artificial pneumothorax. In the last of these cases the pneumothorax was induced in March, 1923, so that in every case it is over ten years since the treatment began.

I put the cases into the following groups:—

(A) Those with little or no resistance and an acute pulmonary tuberculosis. This group consisted almost entirely of the acute disease found in young girls of about 16 or 17 years.

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(D) Non-tuberculous cases.

In every case except in group (D) tubercle bacilli were present in the sputum. To-day artificial pneumothorax is induced far more readily than it was ten or fifteen years ago, and it is now quite common to find a case with very few symptoms and no signs except on X ray examination being treated by pneumothorax. I agree with the modern tendency to induce an artificial pneumothorax early and think it is still done more often too late than too early, but one must admit that many patients made an excellent recovery with simple sanatorium treatment, so that a number now treated by pneumothorax would have become well without it.

In the present series the treatment was never started unless the patient showed no sign of improvement after some six months' simple medical treatment. Even if crepitations were heard over the upper part of one lung and tubercle bacilli were present in the sputum the patient was given a trial of sanatorium treatment, and as this leads to a temporary improvement in most cases, pneumothorax was usually deferred until some subsequent relapse by which time the disease was advanced.

In 1922[2] I protested against waiting more than six months before inducing a pneumothorax if tubercle bacilli persisted in the sputum, and advocated starting the collapse earlier, but it may be taken that in every case in the present series a trial of simple medical treatment had been made and that in the great majority the patient was getting worse. Not one was what now would be called in the early stage.

Table I.—*Cases in which an Efficient Pneumothorax was Produced (1924)*

—	S.P.	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested ..	2	—	50	17	—	13	82
Better ..	—	1	8	13	1	2	25
No change ..	1	—	3	6	—	4	14
Worse ..	2	—	6	7	1	—	16
Dead ..	3	3	4	18	19	6	53
Total ..	8	4	71	61	21	25	190

S.P. = Spontaneous pneumothorax.

These facts should be borne in mind when comparing this series with others. Table I. shows the condition in 1924 of patients treated by an efficient artificial pneumothorax, and Table II. the present condition of the same patients except for five who cannot be traced. In eight cases the collapse started as a spontaneous pneumothorax but was subsequently controlled artificially.

TABLE II.—*The same cases in 1933*

—	S.P.	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested ..	1	—	36	7	—	12	56
Alive but not arrested ..	—	—	3	4	—	1	8
Dead ..	7	4	32	46	21	11	121
Total ..	8	4	71	57	21	24	185

Table III. shows the results in cases where the pneumothorax was only partial and maintained for less than three months.

TABLE III.—*Cases in which only a Partial and Incomplete Collapse was Produced (1924)*

—	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested	—	2	—	—	1	3
Better	—	1	2	—	—	3
No change ..	—	—	1	—	—	1
Worse	—	2	1	—	—	3
Dead	3	1	5	11	1	21
Total ..	3	6	9	11	2	31

TABLE IV.—*The same cases in 1933*

—	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested	—	1	2	—	1	4
Alive but not arrested ..	—	1	—	—	—	1
Dead	3	4	7	11	1	26
Total ..	3	6	9	11	2	31

Table V. gives the results in cases where an attempt was made but no collapse was obtained.

TABLE V.—(*1924*)

—	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested	—	—	—	—	—	0
Better	—	2	—	—	—	2
No change ..	—	3	2	—	—	5
Worse	—	1	2	—	—	3
Dead	2	5	6	4	2	19
Total ..	2	11	10	4	2	29

TABLE VI.—*The same cases in 1933*

—	A.	C.1.	C.2.	C.3.	D.	Total.
Arrested	—	3	1	—	—	4
Alive but not arrested.. ..	—	—	—	—	—	0
Dead	2	7	9	4	2	24
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One could not be traced.

In fatal cases where an efficient pneumothorax was obtained, the interval of time between the induction of pneumothorax and death of the patient was as given in Table VII.

These deaths were not all due to tuberculosis, two were suicides, three were from pneumonia, and one followed a motor accident, and no doubt others resulted from some non-tuberculous cause. I decided to record them simply as deaths in order to avoid the obvious criticism that death was probably hastened by tuberculosis even if not actually caused by it.

The fact I would emphasise is that of 71 unilateral cases who failed to improve after at least six months' simple treatment and for whom the prognosis was considered bad, and all of whom had tubercle bacilli persisting in the sputum, over half are alive and free from symptoms of tuberculosis after a period of more than ten years.

TABLE VII

—	C.1.	C.2.	C.3.
1– 6 months..	—	1	4
6–12 ,, ..	—	—	9
1– 2 years ..	2	12	6
2– 3 ,, ..	6	10	1
3– 4 ,, ..	6	11	—
4– 5 ,, ..	8	1	—
5– 6 ,, ..	4	1	—
6– 7 ,, ..	—	2	—
7– 8 years ..	2	2	1
8– 9 ,, ..	1	2	—
9–10 ,, ..	1	1	—
10–11 ,, ..	2	1	—
11–12 ,, ..	—	1	—
12–13 ,, ..	—	1	—
Total ..	32	46	21

Out of 57 cases with active disease in the better lung 46 are dead. All the cases with over a third of the better lung affected died within two years, except one who lived for two and a half and another for seven years.

These figures support the modern view that artificial pneumothorax should be done early and especially before there is involvement of the better lung. If the disease remains unilateral artificial pneumothorax offers over a 50 per cent. chance of recovery even if there has been considerable spread of disease in the affected lung and the outlook is considered bad. In definite unilateral cases a higher percentage of recoveries would be obtained if the lung were collapsed at once instead of waiting for a preliminary six months' trial of simple treatment or for a subsequent relapse.

Another reason for collapsing the lung early is to prevent the formation of adherent pleura or adhesions. Although under modern methods thoracoplasty or cauterisation of adhesions may yet lead to a successful issue, the patient's chances of recovery are much greater when a collapse is obtained by artificial pneumothorax without having to resort to such surgical procedures.

Of the 24 non-tuberculous cases in which a successful pneumothorax was induced, 8 were cases of lung abscess, 8 of bronchiectasis, 3 of recurrent hæmoptysis, 2 of chronic pleural effusion, and 3 of carcinoma. Of these the following 21 were recorded in 1923 in THE LANCET.[3]

ABSCESS OF LUNG

1. Abscess in the left lung after confinement in a woman of 34. Pneumothorax maintained for 13 months. She is now fit and has had no return of the symptoms.

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3. Abscess in the right lung following broncho-pneumonia in a man of 30. Pneumothorax maintained for 11 months. He is still well and has no symptoms.

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5. Abscess of left lung in a man of 50. Three months after pneumothorax was induced the abscess ruptured whilst he was running. Pus was aspirated and the pleural cavity washed out on several occasions. He recovered and is now well except for dyspnœa on exertion.

6. Abscess in the right lung after appendicectomy in a man of 42. Pneumothorax was maintained for four months but the abscess was not collapsed owing to adherent pleura. The lung was allowed to re-expand and a partial thoracoplasty was done. He is now free from symptoms.

7. Pneumothorax induced for an abscess of the right lung in a man of 36. A large adhesion prevented the collapse of the lung so thoracotomy was performed and the adhesion divided, but the patient died the next day.

it adhesions in situations difficult of access can be dealt with more readily than with knife or scissors.

In suprapubic prostatectomy by the "open" method the mucosa can be readily incised with the electrosector in circular fashion around the vesical orifice of the urethra before commencing enucleation, thus leaving a smooth mucosal edge instead of a torn and ragged one; with it the "prostatic shelf" can be divided or, better still, a V-shaped portion removed therefrom, while the coagulating current can be easily applied to any bleeding point in the prostatic bed. In the per-urethral resection of the prostate with the McCarthy prostatic electrotome or one of its modifications, if the cutting current from a triode valve apparatus be employed the loop must be drawn through the projecting prostatic tissue more slowly than when incising skin owing to the comparatively slight coagulating action of the undamped wave current; otherwise the oozing of blood from the raw prostatic surface exposed may prove rather troublesome.

In thyroid gland surgery, particularly in the presence of hyperthyroidism, the electrosector can replace the scalpel throughout. Division of the skin with the very fine (0·005) tungsten wire as the active electrode can, I am convinced, leave a scar at least as inconspicuous as that after scalpel incision. The gland tissue can be readily severed and any spurting vessels coagulated, while it is sometimes preferable to scoop out with the tungsten wire loop as the active electrode the main mass of each lateral lobe, carefully avoiding the vicinity of the recurrent laryngeal nerves; this leaves a mere shell of thyroid tissue, and the cavity thus remaining can be obliterated by catgut suture.

It is in the electrosurgical treatment of such minor affections of the anal canal as polypi, fissures, fistulæ, and hæmorrhoids that is noticeable more markedly, perhaps, than elsewhere the remarkable diminution in post-operative pain as compared with that after the more usual surgical procedures; its application is here invaluable.

Finally, from the point of view of the surgeon himself, electrosection will revive his interest in surgical procedures which, owing to the systematisation and standardisation of their technique, have become almost monotonous in their performance: even such simple operations as the excision of a sebaceous cyst or of a chronically inflamed bursa acquire, with electrosurgery, a fascination of their own. Moreover, electrosurgery is but in its infancy, and there is every reason to hope that considerable advances will be forthcoming in the near future—possibly even the replacement of suture of the tissues in some cases by a process of electric welding analogous to that now utilised in connexion with metals. Be that as it may, the more I see of electrosurgery the less inclined I am to concur in that dictum of the most famous of living British surgeons that "the craft of surgery has almost reached its limitations." *

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—	A.	C.1.	C.2.	C.3.	D.	Total.
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6–12 ,, ..	—	—	9	8– 9 ,, ..	1	2	—
1– 2 years ..	2	12	6	9–10 ,, ..	1	1	—
2– 3 ,, ..	6	10	1	10–11 ,, ..	2	1	—
3– 4 ,, ..	6	11	—	11–12 ,, ..	—	1	—
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5– 6 ,, ..	4	1	—				
6– 7 ,, ..	—	2	—	Total ..	32	46	21

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7. Pneumothorax induced for an abscess of the right lung in a man of 36. A large adhesion prevented the collapse of the lung so thoracotomy was performed and the adhesion divided, but the patient died the next day.

BRONCHIECTASIS

8. Right-sided bronchiectasis in a woman of 23. Still fit and free from symptoms.
9. Bilateral pneumothorax for bronchiectasis of both bases in a woman of 22. This patient is well and at work.
10. Right bronchiectasis in a boy of 15. Died from cerebral abscess in 1926.
11. Left bronchiectasis in a man of 36. Died December, 1927.
12. Left bronchiectasis in a man of 41. Immediate improvement after pneumothorax, but the lung became drawn out by the contraction of adhesions so thoracoplasty was performed and he died shortly afterwards from pneumonia.
13. Right bronchiectasis in a woman of 33. Pneumothorax treatment only partially successful so thoracoplasty was performed but she died a few weeks later.

HÆMOPTYSIS OF UNKNOWN ORIGIN

14. Recurrent hæmoptysis for 14 years in a man of 28. No return of hæmoptysis since collapse of the lung and he is still fit and at work, but his son has recently developed pulmonary tuberculosis.
15. Recurrent attacks of hæmoptysis in a woman of 27. These were stopped by pneumothorax but she died in 1925 from tuberculosis.
16. Recurrent hæmoptysis in a woman of 32 with signs at the base of the right lung. The pneumothorax did not control the hæmoptysis. She died from influenza in 1927.

CHRONIC PLEURAL EFFUSION

17. Man of 44. Still keeping fit.
18. Woman of 30 who is still fit and free from symptoms.

The other three cases recorded in 1923 were of carcinoma, and all died.

The last three cases which have not been recorded are :—

1. Abscess of lung following tonsillectomy in a woman of 24. The pneumothorax was maintained for seven months. She lost her symptoms and remains well.
2. Bronchiectasis in a woman of 28 who was improved, but still had sputum and died of pneumonia nine years after the pneumothorax had been induced.
3. Bronchiectasis in a boy of 18. This was only partially successful and was followed by thoracoplasty. He is still alive and able to help with a little housework, but has copious and occasionally offensive sputum.

It is more usual at present to treat bronchiectasis and abscess of the lung by surgical means rather than by artificial pneumothorax, and it is only on rare occasions that I now advocate pneumothorax for these diseases. The danger of artificial pneumothorax in cases of abscess is that the abscess may rupture and produce a pyopneumothorax. It has always seemed to me that this danger has been as much exaggerated as the danger of surgical treatment has been underestimated. With modern surgical technique operation in cases of abscess is less dangerous than it was some years ago, and if not yet safe is, I think, less dangerous than other methods of treatment in this most serious disease.

In this series there are eight cases of abscess of lung in whom a pneumothorax was induced and seven of them are now well in spite of the accidents which happened to two during the treatment.

There were eight cases of bronchiectasis, of these only two are now well and one of these had bilateral disease and both lungs were collapsed. One is alive but still has symptoms of bronchiectasis and five are dead.

The majority of these cases were patients at the Brompton Hospital, and my thanks are due to the lady almoner, Miss Marx, for keeping in touch with them.

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LIPODYSTROPHIA PROGRESSIVA

BY W. HARTSTON, M.D., M.R.C.P. Lond., D.P.H.
ASSISTANT MEDICAL OFFICER OF HEALTH, RHONDDA, SOUTH WALES

THE first authentic case of lipodystrophia progressiva was reported by Barraquer[1] in 1906. He called the condition "atrophy of the cellulo-adipose tissue." Osler is credited with having seen a case in 1895 and given his records made at that time to Parkes Weber,[2] who published them along with notes of his own cases in 1917. In 1911 Simons[3] reported a case studied in detail and gave the name "lipodystrophia progressiva" to the condition. Some 85 genuine cases have so far been recorded. A number reported under this name are from their description not really lipodystrophia progressiva but belong to such disorders as facial hemiatrophy, subcutaneous fat atrophy (localised), and lipodystrophia cachexia (Pende-Simmonds).

THE SYNDROME CLINICALLY

The true disease lipodystrophia progressiva is characterised by a symmetrical loss of the subcutaneous fat, the disappearance of which commences usually in the face, and then spreads to involve the neck, thorax, upper extremities, and abdomen. In a few cases the face only remains affected; in others the face, arms, neck, and upper thorax; in still others the fat disappears almost down to the iliac crests. The breasts may also be involved and in female subjects are composed only of glandular tissue over which the skin is freely movable. Recognising the limitation of the fat atrophy usually to the upper half of the body, Marañon and Cascos[4] suggested the name "lipodystrophia cephalothoracica" for this type, wishing to emphasise thereby the commonest characteristic of the disease—namely, the fact that it is only the subcutaneous fat of the upper half of the body that disappears, whereas the fat of the lower half of the body remains intact or is even increased.

Progression is variable. Sometimes the process of fat disappearance is completed in less than two years; sometimes it continues for ten years before becoming arrested. Lipodystrophia progressiva is not hereditary, familial, or racial. The onset occurs usually in young childhood before the eighth year. It has been seen in a child of 2[5] and in a woman of 55 years.[6] The condition is more than twice as common in females as in males. When the latter are affected the loss of fat is usually limited to the face. Almost fully developed cases in males are extremely uncommon, though two have recently been described[7][8] and bear a remarkable similarity to each other and to the two cases reported in this paper.

The progress of the lipodystrophy may be arrested at any level temporarily or permanently. Infectious disease and pregnancy have been known to accelerate the process. At puberty, with the manifestation of secondary sexual characteristics, increase of subcutaneous fat below the iliac crests becomes marked so that the body appears as if composed of the upper and lower halves respectively of two entirely different individuals. This clear-cut demarcation is well illustrated in Case 1 below (Fig. 1), and is very suggestive of an involvement in accordance with the nerve-root distributions of spinal segments.

When the condition is fully established, physical examination discloses a complete absence of subcutaneous fat in the affected parts. The skin, which is of normal colour, feels thin and rides loosely over the underlying musculature which appears unduly prominent, giving a very masculine appearance to a woman's limbs. Muscular power is unimpaired, the bones, hair, and sweat glands are unaffected. A marked hollowing of the cheeks with undue prominence of the zygoma above the hollow is characteristic and with the pallor which is frequently observed lends a cadaverous expression to the face. The skin, which lies smoothly on the face, becomes rolled up into numerous folds at the corners of the mouth when the patient smiles. Simons' expression *Totenkopf* or death's head, amply describes the appearance of the face. These cases bear a remarkably close resemblance to one another. Once seen, or the clinical description firmly set in the mind, a case is unlikely to be missed. Affected patients are able to enjoy all the activities of healthy people and are usually able to carry on their ordinary duties. Children affected by this condition frequently experience difficulty in securing employment in later life on account of the somewhat forbidding appearance of extreme ill-health, but ordinarily they do not suffer any subjective symptoms. They come or are brought to a physician or hospital because of the marked emaciation of the face and thorax. The two cases reported below were discovered during the routine medical inspection of school-children.

Lipodystrophy limited to the lower limbs and pelvic girdle and not affecting the thorax or face and arms does occur occasionally but is unusually rare. Hugh Smith[6] reported a case in a woman, aged 55, in whom loss of subcutaneous fat in the lower limbs had been present for three years. Horton and Emmett[9] record a case associated with uræmia in a woman, aged 61, who asserted that the absence of subcutaneous fat over the pelvic girdle and lower extremities had been noticed all her life. Ziegler,[10] in a report on seven cases of lipodystrophia, includes one of a female, aged 27, who first lost the subcutaneous fat from the lower extremities and then from the entire body in two distinct attacks. The condition in this case was associated with splenomegaly, hepatomegaly, and diabetes.

PATHOLOGY

The blood chemistry in lipodystrophia progressiva is normal. Autopsies when carried out[11 12] have shown nothing of significance except the absence of subcutaneous fat and failed to reveal anything constant which might point to a factor in the ætiology. The skin is normal in histological structure except that there is complete absence of fat in the tissue beneath the corium. Fat persists in the sebaceous glands where part of it is doubly refractile. Such "fat" is, of course, really sebum, an epithelial degeneration product of the cells lining the sebaceous glands. True subcutaneous fat is deposited by the coil glands after filtration from the cutaneous lymphatics.

ÆTIOLOGY

In the reported cases the onset has frequently been associated with a history of infection, especially one of the acute specific fevers. Since, however, the condition takes some considerable time to become fully developed and since it is not as a rule recognised until fairly advanced, it becomes difficult to identify any particular factor as the actual starting-point in the pathogenesis.

Endocrine disorder, more especially of the pituitary or pineal bodies, is frequently put forward as the ætiological cause. The evidence in favour of such a view is, however, extremely slender.

Parkes Weber[13] suggests that since basophilic hyperpituitarism is accompanied by excessive development of subcutaneous fat in the face and trunk whilst the legs may be thin, it is just conceivable that in lipodystrophia the disappearance of subcutaneous fat from the face and often also from the trunk, occasionally with obesity of the legs and buttocks, may be due to a condition of basophilic hypopituitarism. The suggested explanation is too facile, and is unsupported by any actual facts.

A second theory, that the condition is a "trophoneurosis," has been mooted. This is supported by the fact that certain reported cases of lipodystrophia have been associated with phenomena indicating sympathetic disturbance, including such changes as trophic disturbances of the skin and nails, cutaneous pigmentation, acrocyanosis, abnormal perspiration, and erythromelalgia. Parkes Weber[14] would classify lipodystrophia progressiva with the congenital developmental dystrophies. He suggests that there is in this condition a redistribution of fat similar to the redistribution of pigment in vitiligo, and that as such it is the result of some disturbance of the vegetative nervous system. Such an explanation is, however, difficult to correlate with the complete and sharply defined absence of fat in the affected parts, or with the fact that the disease does not always follow the course of taking fat from the upper part of the body and adding it to the lower part.

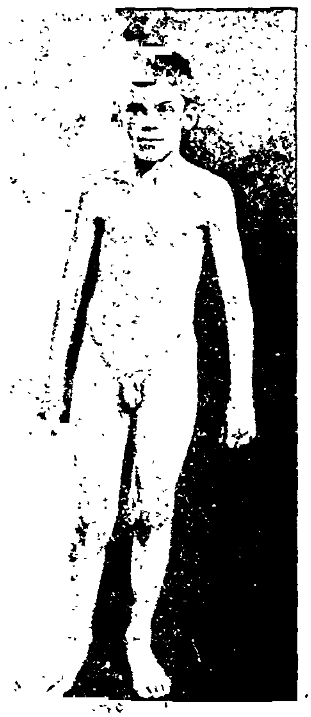

FIG. 1 (Case 1).—Shows sharp line of demarcation at umbilical level between lipodystrophic upper and unaffected lower halves of body.

It is more probable that the disease is due to an interference with the normal deposition and incorporation of fat globules in the subcutaneous areolar tissue of the affected area. The fatty tissue of the corium and subcutis is laid down by the coalescence of fat globules filtered from the lymphatics by the coil glands of the skin. In lipodystrophia apparently this filtration function of the coil glands has become inhibited, although their sweat production remains unimpaired. It is conceivable that this disturbance of function is due to an alteration in the innervation of these glands. Of interest in this connexion is a case of "fat atrophy" reported by Sydney Thomson.[15] Here a unilateral absence of subcutaneous fat appeared in a distinctly zosteriform distribution, the bands ending absolutely in the midline and involving cervical segments 3 and 5 with thoracic 4 to 10. The epidermis was normal and there were no symptoms paræsthesial or sensory changes.

TREATMENT

Satisfactory treatment for this disfiguring malady has not been found. No case has been recorded in which the fat has returned. In attempting to increase the subcutaneous fat deposits these patients succeed merely in increasing the subcutaneous fat in those parts already well provided, so that the disproportion between the affected and the unaffected parts of the body becomes even more patent.

CASE REPORTS

CASE 1.—A youth, aged 11 years, has had a thin face since the age of 3 to 4 years. Photographs show that as a baby he was quite plump. There is no known antecedent cause to which the mother can attribute the condition, which definitely started in the face. The boy enjoys good health and plays all games. His intelligence is normal. At the age of 3 years he had measles and chicken-pox. He was jaundiced at 9 years. The family history reveals nothing relevant.

On examination the youth presents an extremely emaciated appearance. He admits that his school-fellows call him Monkey Face. There is no palpable subcutaneous fat in the upper half of the body including the upper limbs down to the level of the umbilicus (Fig. 1). The skin is of normal colour and texture but may easily be pinched up to 1½ in. when it is seen to be translucent. The muscles of the upper limbs and thorax are unusually prominent. The face is small with the mouth pushed forward. Bony prominences, especially the malar bone, are unduly marked producing deeply hollowed cheeks. When smiling, a number of parallel furrows are produced round the angles of the mouth. The nails and teeth are normal. The lower limbs are well developed and powerful and plenty of subcutaneous fat is palpable over them. The hair covering the head is a "mousey" colour and fairly plentiful. He has no pubic or axillary hair. Both testicles are present in the scrotum. The urine and stools show no abnormality. Height and weight are normal for his age according to the tables of averages for local normal children. No other abnormal physical signs are demonstrable. The thinness of the upper half of the body contrasts very strikingly with the comparative plumpness of the hips and lower limbs. A sharp line of demarcation between the thin and the normal skin is visible at the level of the umbilicus (Fig. 1). The Wassermann reaction in the serum is negative. Radiography of the skull and skeletal bones reveals no abnormality.

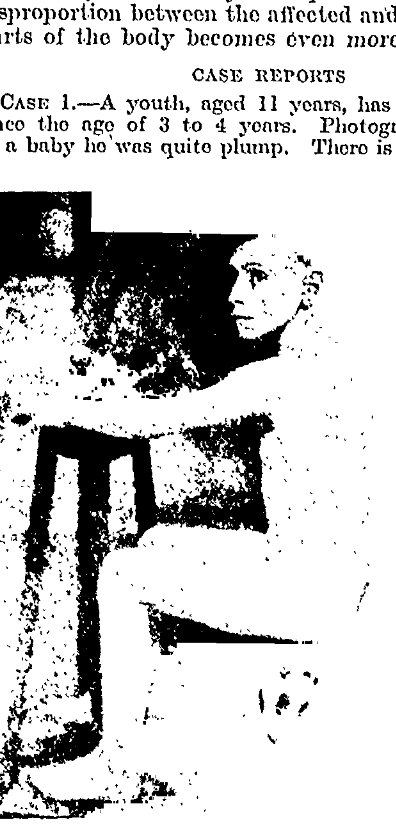

FIG. 2 (Case 2).—This photograph also shows the characteristic thin face and the absence of fat above the level of the umbilicus.

Attempts to fatten this child by generous diet have failed to improve the appearance of the affected skin.

CASE 2.—Male, aged 11 years, suddenly became thin in the face at 5 years of age, apparently after an attack of chicken-pox. Until then he had always been well and a photograph taken at the age of 4 shows him with a chubby face. He had measles at 2 years. He leads an active, healthy life and presents no symptoms. Like Case 1 he was discovered during routine school medical inspection. His mother averred that she had tried many "remedies" without any benefit. There is nothing noteworthy in the family history.

The boy on examination (Fig. 2) is a typical case of lipodystrophia progressiva affecting the face, neck, arms, and trunk to the level of the umbilicus, in all detailed respects exactly similar to Case 1. Apart from the absence of subcutaneous fat no abnormal physical signs were elicited. The serum Wassermann reaction and radiography of the skull and bones of upper limbs were negative.

My thanks are due to my colleague, Dr. Gwladys Davies, for drawing my attention to the second case and to my chief, Dr. J. D. Jenkins, for permission to publish these cases.

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BENIGN STRICTURES OF THE RECTUM*

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THERE are many and varied causative factors in the production of simple strictures of the rectum.

Congenital strictures are usually the result of inadequate union between the proctodeal invagination and the hind-gut proper. Any degree of obstruction, from stenosis of the anal orifice up to complete atresia of the anal canal, may be present. Imperforate anus may be associated with absence of a portion or the whole of the rectum. Operations on such conditions in early life may be followed by marked stricture formation.

I have had a case of this nature under my care: A child about 6 years old had been operated upon soon after birth for imperforate anus. The rectum was represented by a long tubular stricture, associated with complete incontinence of fæces. It was found necessary to establish a permanent colostomy.

Acquired strictures may be classified as (1) spasmodic and (2) organic. The former are uncommon, but undoubted cases of spasm of the sphincter muscles without any obvious causative factor have been described from time to time. Of course, such spasmodic strictures are very commonly associated with fissures and any form of ulceration in the anal canal.

VARIETIES OF ORGANIC OR FIBROUS STRICTURE

Traumatic strictures may follow accidental wounds of the anal canal and rectum—e.g., sitting on a spike, gunshot wounds—in which anal or rectal tissues are lost at the time of injury or else subsequently slough as the result of sepsis. Under this heading must also be included strictures of the rectum following labour, in which sloughing of the rectal wall occurs as a result of pressure between the child's head and the promontory of the sacrum. They are usually about 2 to 2½ inches above the anus.

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* Post-graduate lecture given at St. Mark's Hospital.

Post-operative strictures.—The removal of internal piles by operation may be followed by a greater or lesser degree of fibrosis and contraction of the lumen. This is especially the case if large bare areas of submucous tissue are left after removal of piles. This is very likely to happen after Whitehead's operation, and is due to giving way of part of the line of suture of the mucous membrane to the anal skin. The mucous membrane retracts, leaving a large bare area which undergoes cicatrisation and contraction. Similar stenosis may follow any method of operation for internal piles, especially the high-stripping operation. The occasional judicious passage of a well-vaselined finger during convalescence will often obviate this unpleasant sequela.

The use of strong chemical solutions in the injection treatment for piles has also been responsible for sloughing of the rectal wall with subsequent stricture formation. Similarly, strictures have been known to follow the giving of an enema in which the fluid was too hot, ulceration and fibrosis resulting. In the pre-antiseptic days, ulceration of the rectum very commonly followed any rectal operation, but this is most unusual with modern methods.

Fistula operations, if associated with much sepsis, may be followed by rectal stricture. I have a patient in hospital at the present time who, as a result of several operations for fistula elsewhere, has a well-marked stricture, necessitating a colostomy.

Gonorrhœal proctitis is due to direct extension from the genital passage as a rule, and is most commonly found in women. Sir Charters Symonds, in a presidential address to the subsection of proctology of the Royal Society of Medicine in 1923, lays stress on gonorrhœa as a common cause of fibrous stricture of the rectum in women. He examined 38 specimens of stricture apparently of this nature in the various hospital museums in London and at the Royal College of Surgeons; 27 of these were from women, 6 were from men, and 5 were unspecified. They were all of the same type (to be described later). Owing to the proximity of the anus and vagina, one would naturally expect gonorrhœal proctitis to be more common in women. Lockhart-Mummery thinks it unwise to label such strictures as being due to any specific cause. He believes that they result from neglected chronic sepsis, due to any cause.

Syphilis has been cited in many text-books as a common cause of fibrous stricture of the rectum. There can be no doubt, however, from Sir Charters Symonds's investigations, that many cases previously labelled as syphilis are in reality gonorrhœal in origin. In an address delivered before the Medical Society of London in 1922, Prof. Henri Hartmann stated that out of 86 cases in his own practice 50 were in women and 36 in men. Carre, as mentioned in his thesis, in a series of 266 cases found 210 in women and 56 in men. In Hartmann's 86 cases syphilis undoubtedly existed in 30. He states that this frequency of syphilis in patients suffering from strictures of the rectum is nowadays acknowledged by all who have studied the question. There are many authorities, however, who are still doubtful as to the part played by syphilis in the production of rectal strictures. Charters Symonds showed that many specimens labelled as syphilitic in the various museums of London were certainly of gonorrhœal origin. Very few cases of undoubted syphilitic strictures have been seen at St. Mark's Hospital. It does not follow that a stricture is necessarily syphilitic because the patient happens to be suffering from syphilis.

Lockhart-Mummery emphasises these points and regards simple strictures of the rectum as always due to "chronic ulceration of the rectum and sepsis," and only rarely to syphilis, either directly or indirectly. It is stated in Thomson and Miles's "Manual of Surgery" that:—

> "The commonest cause of non-malignant stricture of the rectum is a chronic pyogenic infection, probably in most cases of gonococcal origin. The proportion of syphilitic cases has been exaggerated on account of the tendency to attribute to syphilis all strictures in which no other definite cause can be described."

Charters Symonds sums up the matter in the following remarks:—

> "The chief reason in favour of this form of rectal ulceration and stricture being determined by a local cause is its prevalence in women; clinically I have never seen it in men. The easy access of discharges from the vagina to the rectum in women is obvious. I am not prepared to deny that the secretions from chancres do not determine the ulceration, but I would submit that the disease is due to local and not constitutional causes, otherwise it would occur as frequently in men as in women. Nor can it be asserted that syphilis is wholly absent, and it is possible that local irritation may determine a syphilitic deposit. Gonorrhœa is a far more frequent infection than syphilis, and the well-known tendency to the formation of cicatricial contraction is seen in the male urethra. Again, the occurrence of adhesions of the Fallopian tubes and ovaries found in these cases, supports the view that gonorrhœa has existed."

H. S. Stannus regards an infection with the *ultramicroscopic filtrable virus*, which is responsible for the development of "climatic bubo" and "lymphogranuloma inguinale," as an important factor in the production of inflammatory strictures of the rectum. In his opinion the so-called syphilitic and gonorrhœal strictures are really due to an infection with this virus.

Inflamed and sloughing internal piles may be followed by ulceration-fibrosis and subsequent cicatricial contraction of the anal canal and rectum.

Tuberculous stricture is very rarely met with in the rectum, but is more common in the colon. Hartmann found 10 patients, in a series of 86, in whom pulmonary tuberculosis existed before the first symptoms of stricture. This does not, however, justify the conclusion that such strictures are of tuberculous origin.

Chronic ulcerative colitis.—It is now well known that stricture may follow chronic ulcerative colitis. Similar lesions may also be present in the rectum as a result of chronic ulcerative proctitis, a condition usually associated with ulcerative colitis.

Dysentery is a rare cause of stricture of the rectum. Several cases have, however, been described, and I have myself seen one case which was apparently of dysenteric origin. One would have expected that extensive and severe ulceration of the bowel, such as is found in dysentery, would often be followed by stricture-formation, but it is unusual.

Bilharzia may produce ulceration of the rectum, rarely followed by stricture.

Under the heading of *strictures following perirectal inflammation* must be placed all varieties of pelvic cellulitis, and also perirectal fibrosis following the application of radium for uterine affections. Proctitis is a not uncommon sequel to the radium treatment of uterine carcinoma or menorrhagia, and it may be followed by the formation of dense fibrous tissue both in the coats and outside the wall of the bowel.

I had a patient recently who developed acute intestinal obstruction, the result of a fibrous stricture of the rectum, due to applications of radium for carcinoma of the cervix uteri. This necessitated a colostomy. In due course the fibrous tissue resolved, and it was found possible to close the colostomy.

PATHOLOGICAL FEATURES OF FIBROUS STRICTURES OF THE RECTUM

The strictures may be single or multiple; they may be annular, cylindrical, funnel-shaped, or irregular. They usually affect the lower three or four inches of the rectum, including the anal margin, and may reach into the pelvic colon. There is no ulceration of the actual lining membrane of the stricture, where the ordinary cylindrical type of epithelium has been replaced by a pavement epithelium; ulceration, if present, is usually above the stricture, but may also be below.

The stricture involves the whole circumference of the bowel, and is characterised by bands of indurated and fibrotic muscle, between which are pockets, from the bottom of which fistulous tracks may lead to the surface in the anal region or into the vagina. The extreme narrowing occurs at several points, and will often prevent the passage of even a small bougie. One characteristic feature is the presence of hard polypoid growths ringing the anal margin, a condition said to be typical of gonococcal stricture of the rectum. In old fibrous strictures, polypi may form immediately above the stricture. These may develop long pedicles and project through the stricture.

The bowel above the stricture is dilated and the mucous membrane catarrhal or ulcerated. Below the stricture the bowel is often ballooned owing to paralysis of the muscular coat. If the constriction is low down, the tone of the sphincters is lost; the anus becomes patulous, the mucous membrane prolapses, and there is loss of control.

COMPLICATIONS AND SYMPTOMS

Complications may be classified as follows: (1) peri-rectal suppuration and fistulæ; (2) ulceration of the mucous membrane above the stricture; (3) perforation of a stercoral ulcer above the stricture; (4) chronic intestinal obstruction, sometimes ending in acute obstruction due to blocking of the stenosed bowel by fæcal impaction, &c.; (5) cancer has been described as supervening upon an inflammatory stricture.

Clinical features.—The age-incidence is 20 to 40 years, and females are affected more often than males. The symptoms include an increasing mucopurulent and blood-stained discharge; a feeling of fullness and of "something in the rectum"; and frequent and ineffectual actions of the bowels, with "spurious diarrhœa." If the stricture involves the anal canal, as it often does, then incontinence of fæces is superadded, and there may be wasting and toxæmia. Too much importance should not be attached to the shape and size of fæcal material passed. A soft mass of fæces must take its shape from the last orifice through which it passes—i.e., the anus. Unless, therefore, the stricture is close to the anal margin, the shape of the excretion can have no clinical significance.

PREVENTIVE AND PALLIATIVE TREATMENT

Preventive treatment implies rigid and early attention to any form of proctitis and to the cause. Palliative treatment resolves itself into dilatation, which may be rapid or intermittent. This must be undertaken with the utmost care, since serious or fatal accidents have resulted. These are due to splitting of the stricture with the perirectal spread of infection leading to cellulitis and septicæmia, or even to peritonitis if the stricture is above the peritoneal reflection. I know of one case in which the injudicious passage of a sigmoidoscope, under an anæsthetic, led to perforation of the thinned bowel above the stricture, the instrument entering the peritoneal cavity.

The dilators used should be either soft flexible rubber bougies or graduated metal dilators. Dilatation may have to be done at several sittings. Stretching of a stricture is usually a painful process, necessitating the use of an anæsthetic. When the stricture has been successfully dilated the patient may be given a dilator of suitable size and instructed how to pass it himself daily.

OPERATIVE TREATMENT

Internal proctotomy is indicated in small annular strictures, especially those in which a well-marked diaphragm is present. The stricture is partly divided by means of a blunt-ended bistoury guided by a finger in the rectum. The division should be made in several places and in a posterior or postero-lateral direction. This is followed by gradual dilatation with graduated metal dilators. The patient must continue to pass a dilator himself regularly for some weeks subsequently.

External proctotomy or posterior linear proctotomy.—In this operation the stricture, together with the rectal wall, anus, and overlying tissues, are all divided. Such an operation is comparable with external urethrotomy. It is suitable for strictures within three or four inches of the anus and those of the cylindrical or funnel-shaped varieties. Temporary incontinence will follow, but the final results as a rule are encouraging. The operation affords good drainage, which is a point of great importance in rectal operations. Mr. Swinford Edwards considers it safer than internal proctotomy because of the better drainage established. It must, of course, be followed by the regular and systematic use of dilators for some considerable time.

Excision of the stricture is the operation favoured by Hartmann. The preliminary steps are similar to those of a Whitehead's operation. After dissecting up a cuff of mucous membrane, the bowel wall is divided above the sphincters. The rectum is isolated and freed to well above the upper limit of the stricture. (The peritoneal cul-de-sac may have to be opened in certain cases.) The portion of strictured rectum is excised and the cut end of bowel brought through the sphincters and sutured to the anal skin. Drainage is established by making a counter-opening in one or both ischiorectal fossæ in order to drain the post-rectal space. Such an operation may be exceedingly difficult on account of perirectal fibrosis, but Hartmann has had good results. Colostomy followed by removal of the coccyx and perineal excision of the rectum as for carcinoma may be deemed advisable. In certain cases it has been found possible to leave the sphincters intact and to bring down the cut end of the bowel through the sphincters to the anal margin.

Again, the rectum may be exposed posteriorly by a perineal incision and removal of coccyx, the strictured portion may be excised, and an end-to-end anastomosis of the divided portions of bowel may be established. Adequate perineal drainage must be provided, since a temporary fæcal fistula often results.

Colostomy may be temporary, in order to divert the passage of fæces, and so allow the ulcerated rectal mucous membrane to heal; as soon as the rectum is clean, the stricture may be dilated and finally the colostomy closed. On the other hand, a permanent colostomy may be necessary. This is advisable in cases of long tight strictures with much perirectal infiltration and loss of sphincteric control. A patient is much more comfortable with a colostomy working well than with constant rectal discharge and incontinence of fæces, let alone the danger of severe ulceration and perforation.

Certain other methods have been described for the treatment of fibrous strictures of the rectum—e.g., metal bulbs to which the negative pole of a galvanic current is attached. The galvanic current is said to favour the absorption of fibrous tissue. Negative ionisation, associated with dilatation with bougies, has also been advocated. Injections of fibrolysin have been tried without much success.

CUTANEOUS AND OTHER COMPLICATIONS OF CHRONIC ALVEOLAR INFECTION

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THE PATIENT'S STORY

(By Dr. Semon)

In November, 1929, the extraction, under local anæsthesia, of a devitalised first right upper molar tooth opened the antrum and initiated a group of symptoms which persisted almost continuously for three and a half years.

Although subject previously to recurrent furunculosis, limited to the neck at the collar margin, I had enjoyed good health, even when the boils—which seemed to vary with the effect of smoking on a pair of unhealthy tonsillar stumps—were active. The antrum first displayed clinical evidence of infection in December, 1929, and acting on medical advice I took a holiday of six weeks in the dry air of Egypt. A second more severe attack of antral infection, with copious purulent discharge, made it clear, however, that surgery was needed, and in April, 1930, the antral fistula was well scraped and some necrosed bone removed. The resulting channel between the mouth and the antrum was large enough to admit the tip of the little finger. It was thought that the sinus would now heal but it did not do so, and in October a second attempt to promote healing, by intranasal antrostomy and removal of a small portion of the inferior turbinate, also failed—the stitches closing the sinus cutting through in 48 hours.

I continued to have occasional attacks of antritis, although I was now able to wash out the antrum myself, and the furunculosis showed an alarming propensity to increase locally on the neck, and to appear in the nasal choanæ, the aural meatuses, and occasionally on other parts of the body, such as the wrists, buttocks, and scalp. My general health also showed signs of deterioration. Often a few hours before the appearance of a fresh infection I suffered from nausea, sleeplessness, and a curious feeling of restlessness and anxiety, which was increased by the gradual development of precordial pain and tenderness; memory and the power of concentration were also affected. Various general measures—including vaccines both stock and autogenous, actinotherapy, colloidal manganese injections, a course of careful dieting, intestinal lavage, and yeast by the mouth—were tried from time to time. The little relief they afforded was only temporary, the general symptoms and the boils persisted in monotonous sequence, with occasional attacks of antritis and sore-throat.

TWO FURTHER OPERATIONS

The latter symptom was thought to have a bearing, and it was even suggested that the antral sinus might close if the tonsils were enucleated. Accordingly in August, 1931, this, the third operation of the sequence, was performed. I was in some degree rewarded by a temporary cessation of the recurrent boils, and the complete relief—to the present day—of the recurrent attacks of tonsillitis. A culture from one of the tonsils, which contained calcareous deposits, yielded a pure growth of *Staphylococcus aureus*, unlike the previous cultures from the right antrum, from which both *Streptococcus hæmolyticus* and staphylococci had been grown. A culture from the pus in a boil produced the same organisms, and on another occasion streptococci only. (This is interesting considering the generally accepted views on the causal organism of furunculosis.) A blood-sugar curve, performed about October, 1931, revealed no abnormality.

After comparative quiescence for about two months all the symptoms (except the pharyngeal) returned with renewed vigour, and a differential blood count revealed a relative leucopenia. Further dental opinion resulted in the extraction of several carious teeth, from the apices of which the same organisms were grown, and a further trial of vaccines was made without success.

In December, 1931, a well-known continental rhinologist examined me in London and very kindly invited me to his clinic, where he proposed to open the antrum through its anterior wall, and if found necessary to strip the mucous membrane lining it. It was not until April 1932, when I had made trial of every measure that the kindness and ingenuity of medical friends and colleagues could devise, that I accepted the offer and submitted to this, the fourth, surgical attempt to relieve me. The operation, under local anæsthesia—a rather unpleasant procedure—proved that the mucous membrane was quite healthy, and the surgeon contented himself with removing a small ridge of bone above the antral opening of the sinus, which he thought might be retaining secretions and thus preventing closure. The wound was stitched up in its entirety, obliterating the sinus. But on the fourth day it broke down, with the production of fever, much pain locally, and a fœtid discharge. On leaving the clinic a fortnight later I was in statu quo as regards the antrum and its buccal communication, and with a number of boils, which had been present on my arrival, still freely suppurating.

THE INFECTED ALVEOLUS

A recurrence of the local pain, with a perfectly dry antrum, in March of this year convinced me that my symptoms must be the result of alveolar bone infection, although radiograms taken at this time did not conclusively prove it, and three eminent opinions were opposed to the theory and strongly advised against any further surgical interference. I therefore consulted Mr. Leslie Wright whose work in this sphere much interested me. A careful series of radiograms which he took himself convinced him that there was a very definite infection of the alveolar process of the upper jaw, and in order to prove it and gain antecedent knowledge of the state of the bone, he opened up a small chronic and quite "silent" abscess cavity round an old root fragment in the region of the first *left* upper molar tooth, removed ten or more years previously. From this, under extraordinary precautions against contamination, a heavy growth of streptococci and a few staphylococci were obtained by Dr. Dennis Embleton, and a vaccine was prepared.

The resultant effect both on the cutaneous sepsis and general symptoms was most gratifying, although the focus dealt with was several inches from the main body of the infection round the sinus. For nearly a month there were no boils, I slept better, and my antrum remained quiescent. I was much encouraged to undergo the operation of alveolectomy which Mr. Wright considered essential if a cure of the sepsis and closure of the sinus were to be attained. It was performed on June 27th, and the remaining seven teeth which had held the dental plates in upper and lower jaws were extracted.

Recovery was uneventful. Although furunculosis is still troublesome, the mental depression, insomnia, nausea, and other general symptoms have entirely disappeared, while, most significant of all, the antro-buccal sinus has healed, an attainment which would have been frustrated in the presence of persistent local infection of the alveolar processes.

The cutaneous features of this chronic infection were somewhat unusual. In modern parlance we may say that the skin had become sensitised to the predominating organisms, which were demonstrated over and over again in the root apices of dead teeth, in the antrum, and finally in a closed "cold" abscess in the alveolar process. The significance of the latter can hardly be over-estimated. There was hardly any sclerosis of the bone surrounding this neglected root fragment, for a few granulations can hardly be regarded as an effective barrier to circulatory invasion. The anatomical seat of the "boils" furthermore was on many occasions observed to be extra-follicular. They were not, as always in the common boil, infections of hair follicles. Not infrequently their appearance was heralded by general symptoms very suggestive of blood infection, and although an attempt to grow organisms from the blood failed, we cannot on this account rule out the possibility of a bacteræmia, nor is this impossible in the absence of rigors and high fever, which are the usual accompaniments of well-developed septicæmia. Positive blood cultures are notoriously rare, except in the terminal phases, while the possibility of blood infection without general symptoms has been proved in the case of tuberculous and mycotic infections of the skin. The probability of embolic manifestations in this case is further supported by the recovery of identical organisms from the foci in the alveolus, the root apices, the tonsils, and the skin. Not a few cases of fatal septicæmia following extraction of one or more teeth have been reported.

While we cannot of course draw any conclusions from the results in a single case we are perhaps justified in emphasising the dangers of infected, and particularly dead, teeth in creating progressive bony foci in the alveolus. The possibility of this in the absence of definite radiographic confirmation does not seem to be sufficiently recognised either by dentists or by the rhinologists whose function it so often is to deal with the secondary infections of the mucous membranes in the antrum and ethmoid cells and the like. There are many persons going about to-day with unhealed dental fistulæ, and although the majority have no other symptoms, the persistence of such an abnormality ought not to be regarded as unimportant. Its significance is the associated alveolar infection which prevents and precludes closure, and undoubtedly increases the risk of recurrent antral infection and all the associated complications which may supervene from that misfortune. I am firmly convinced that but for the radical intervention in my own case septicæmia must have eventually supervened.

I am not yet cured. There is still a tendency to furunculosis and slight occasional pain in the region of the old sinus. But I was warned that I could not expect complete recovery under a year, and with my general symptoms relieved and an increasing energy I am content to wait. My gratitude to the operator and my admiration of his skill and unceasing care in after-treatment can hardly be expressed in words.

THE SURGEON'S FINDINGS

(BY MR. WRIGHT)

Dr. Semon first consulted me on April 20th, 1933, giving the history he has recorded above. A clinical examination supported my suspicion of deep-seated alveolar infection of both the upper and lower jaw.

In the upper jaw the only remaining teeth were the two canines and right premolar. These had considerably deepened in colour, from chronic periodontal disease, and the gingival spaces exhibited calcareous deposits on the root surfaces resulting from the alveolar bone infection. Occupying the site of the right first molar there was a sinus leading from the antrum to the vestibule, high up in the sulcus, and passing over a rather thick and deep alveolar ridge. Inflamed scar tissue extended forward from the region of the sinus towards the canine and through the canine fossa, and the buccal and palatal mucosa on this side were decidedly hyperæmic. Although the dentures were comfortable and well fitted, the patient complained of recurrent aching and tenderness of the bone in the region of the sinus. The remaining teeth in the lower jaw (left canine to right second premolar) presented the same condition. The premolars and canines were considerably decalcified at the gingival margin, and all the teeth were abnormally hypersensitive to all attempts to scale them. The distinctive hyperæmia of alveolar infection was present here too.

I made radiograms which proved chronic inflammatory root-tissue changes, with destruction of the alveolar bone at the margins to a varying degree, but principally chronic inflammation and infection of the alveolar bone. This I considered was very marked in the right upper alveolar process. On the left side a small fragment of an old root presented an area of rarefying osteitis around it.

I was confident that the infection of the dental structures was paramount in the causation of the marked degree of toxæmia described. The history was quite consistent with "bacterial storms" or recurrent bacteræmia, and, in view of the clinical aspect, and repeated bacterial investigations, I advised a complete upper and partial lower alveolectomy. The result of my investigations on the derelict root fragment has already been described. It may be confidently asserted that it is extremely rare to find pus cells and staphylococci mixed with a heavy streptococcal infection so completely and "silently" enclosed in bone tissue.

The small cavity left by removal of the root was easily obliterated, and the covering flaps of mucous membrane healed by first intention. At a later date and under local anæsthesia I removed the four lower incisors and freely excised the buccal alveolar plate, scraping out the trough of soft infected bone below the apices, and lingual to the apical aspects of the roots. Healing was again quite prompt and afforded some relief to the general condition. It was felt that some measure of protection against a generalised infection had been secured.

On June 27th, under general anæsthesia, I completed the upper alveolectomy. The right upper canine was extracted and a submucous incision from the socket of this made as far back as the tuberosity along the lowest part of the alveolar ridge. The reflection of the cheek flap was considerably impeded by the scar tissue resulting from previous operations. The outer alveolar plate was removed in this area, and on reaching the site of the first molar—the extraction of which had resulted some 3½ years previously in the production of the inveterate antro-buccal sinus—I found the whole of the alveolar process and the antral floor in an advanced degree of rarefying osteitis. A large mass of bone came away in the fingers leaving a base of thickened mucous membrane as large as a halfpenny, very thick, scarred, non-vascular, and resistant to pressure. This scar tissue formed the walls of the old sinus, and a blunt dissector inserted from this point into the antrum made it clear that the lower end of the sinus had been attached to the septic bone just removed. It was freely cut away from the buccal mucosa and its inner end thoroughly curetted. After clearing out the rest of the infected alveolar bone, which extended right round to the left canine area, the free end of the sinus was stitched as far forwards as the site of the canine, and the flaps sutured in position with two small B.I.P.P. gauze strips inserted for drainage. The remaining lower teeth were then extracted and a similar clearance of infected bone completed in the lower jaw.

Recovery was rapid and afebrile. Lavage of the antrum through the enlarged nasal aperture evacuated nothing but a little blood and no suppuration followed. The sloughing of two stitches through the buccal end of the sinus left a deep cavity with the antral mucosa as its roof, but granulations soon filled this in and after about five weeks resulted in complete obliteration of the cavity and an effective closure of the communication between the mouth and the antrum.

The improvement in the general health was more rapid and pronounced than I have usually experienced in cases of this type. Further improvement should accompany absorption and consolidation in the alveolar processes during the ensuing months. Dentures were fitted and well tolerated about five weeks from the date of the operation.

The case confirms my conviction that a successful closure of persistent antro-buccal sinuses can only be achieved after removal of the teeth and thorough excision of the infected alveolar bone in the vicinity.

Clinical and Laboratory Notes

ERYTHROCYANOSIS CRURUM PUELLARUM FRIGIDA

A CASE TREATED BY LUMBAR SYMPATHECTOMY

By J. B. Oldham, F.R.C.S. Eng.
SENIOR ASSISTANT SURGEON, NORTHERN HOSPITAL, LIVERPOOL; SENIOR SURGEON, BIRKENHEAD GENERAL HOSPITAL; CONSULTING GENERAL SURGEON, HOSPITAL FOR WOMEN, LIVERPOOL

Mr. Dickson Wright, in his paper on Vascular Diseases of the Extremities which appeared in The Lancet of Dec. 2nd, states that there is no record of a case of erythrocyanosis crurum puellarum frigida having been treated by sympathectomy. I am, therefore, encouraged to report the following case:—

Miss A., aged 32 years, a shop assistant, was referred to my clinic at the Northern Hospital, Liverpool, on April 4th, 1932. She complained of swelling, discoloration, and coldness of the lower parts of her legs. She said that the swelling of the legs had started, about five years previously, at the back of each ankle, just above the level of her shoes. From the beginning she had noticed that the swollen parts were extremely cold, but it was only during the last two years that she was aware that her feet and legs were very blue. At no time had she been conscious of any itching or tingling. The swollen parts were painful only in cold weather, and did not interfere with her walking. There had never been any ulceration of the skin. According to the patient the swelling and discoloration were steadily becoming more marked.

There was no history of previous illnesses, and nothing special was noted on examination of abdomen, thorax, mouth, urine, or blood. Menstruation was normal.

The legs presented symmetrical swellings over their lower and back parts. These swellings started abruptly immediately above the level of her shoes. Above, the swellings gradually diminished and disappeared at the junction of the middle and lower thirds of the legs. Most pronounced posteriorly, the swellings extended round towards the front of the ankles. There was no swelling of the feet or toes. Over the lower part of the tendo Achillis each swelling was about three-quarters of an inch thick. There was no pitting on pressure. The toes and the back parts of both swellings were very cold and were bluish-violet in colour. Pressure over the discoloured areas caused them to become pale, but the blueness returned immediately the pressure was released. There was no sign of chilblains nor ulceration of the skin. Cutis anserina was not observed. The dorsalis pedis, posterior tibial, and other arteries of both legs were pulsating normally. A mild degree of flat-foot was present on both sides. The Wassermann reaction was negative.

On May 5th the patient was admitted into hospital, and the surface temperatures of the legs and toes were observed before and during spinal anæsthesia (see Table). Under the anæsthetic the toes and swellings became warm and the blueness was replaced by pinkness. It was explained to the patient that lumbar sympathectomy would perpetuate the condition which had been produced temporarily by the spinal anæsthesia, but would probably have no effect on the swellings. She asked us to carry out the operation.

Table showing Skin Temperature Readings in Degrees Centigrade

—	May 5th. Room temperature, 19·5° C.				June 9th. Room temperature, 20° C.	
	After exposure for 1 hour.		After spinal anæsthetic.		(Post-operative.)	
	R.	L.	R.	L.	R.	L.
Patella	27·0	27·0	33·2	33·8	33·0	33·6
Back of ankle ..	22·5	23·5	34·0	34·5	34·0	34·2
First toe	18·5	20·0	33·0	33·2	33·2	33·4
Second ,, ...	19·5	20·0	33·2	33·2	33·6	33·4
Third ,, ...	19·5	20·0	33·75	34·0	33·8	34·2
Fourth ,, ...	20·0	20·0	33·8	34·2	34·0	34·0
Fifth ,, ...	20·0	20·2	34·0	34·6	34·2	34·8

R.=right; L.=left.

On May 10th, under spinal anæsthesia, a bilateral transperitoneal resection of the second, third, and fourth lumbar ganglia was performed. Convalescence was normal. After operation the feet and legs remained warm, pink, and dry. Ten to twelve days after operation desquamation started on the soles of both feet, but was never marked, and had disappeared by the time the patient was discharged four weeks after operation. For the first few days after operation the skin over the swellings was a bright red colour, but it gradually assumed a normal skin hue. The surface temperatures on June 9th are shown in the Table.

I have not had an opportunity of examining this patient since she left hospital, for she lives a long way off and, on account of her employment, cannot travel up to Liverpool. I have, however, heard from her at intervals, and on Dec. 5th of this year she writes to say that the feet and legs remain warm and pink, and though she does not think the swellings have gone down, yet she is certain that since operation the increase in growth, which had previously worried her, has ceased.

ABDOMINAL CATASTROPHIES WITHOUT SHOCK

By Rufus C. Thomas, F.R.C.S. Edin.
CHIEF MEDICAL OFFICER TO HIS LATE HIGHNESS THE MAHARAJA JAM SAHEB OF NAWANAGAR, INDIA

The following cases both show an extraordinary absence of shock after injury producing acute abdominal conditions requiring immediate operation. In both the recovery was rapid and free from anxiety.

Case 1.—A Mohammedan labourer had been unloading bags of sugar at Bedi Port. A crane with a load of several bags swung too far, and he was pinned against the buffer of a railway truck. When picked up he was found to have sustained a rupture of the right rectus muscle, and a considerable portion of the intestine was protruding from the wound. His fellow-workers wrapped a turban round the intestines and brought him up to the hospital, a distance of about three miles, on a lorry.

I saw him about 15 minutes after his arrival. He was in almost no pain, his pulse was quite slow, and there was a complete absence of any signs of shock. The turban had not been removed. The degree of cleanliness of this article can be imagined when I say that it had been on the head of its owner all day while he was unloading sugar, and had probably not been washed for several days.

Under an anæsthetic the protruding gut was washed with normal saline, followed by 1 in 5000 hydrarg. perchlor. The wound was then enlarged, and on further examination I found the small intestine almost cut across in two places. On either side, two patches of gut were very badly damaged, though not actually ruptured. The whole of the damaged intestine was resected and an anastomosis done, side to side, about 2 ft. of gut being removed. The area round the site of the anastomosis was then swabbed out with swabs wrung out in saline, two pints of saline run in, and the wound closed completely after cutting out the damaged edges.

His condition throughout the operation gave rise to no anxiety, and was quite satisfactory that night. When I saw him the next morning, I found he had been anxiously waiting my arrival to ask if he could have his ordinary meal, as he was feeling very hungry. He complained of nothing except a little tenderness around the wound. He was given an ounce of liquid paraffin daily after the second day, his bowels acted normally on the fourth day, and he left the hospital on the twenty-first day at his own request. For three months he did no work, but walked up to the hospital every ten days or so to show himself. He then recommenced work unloading bags, and took every opportunity of proudly displaying his wound and recounting his story to any visitor to the port.

CASE 2.—The second patient was a Hindu woman, aged about 30. She had never been ill in her life before, so she said. Her history was that she had been grinding millet in her house, preparatory to making bread, squatting on the ground in the usual way. In the course of her work she was seized with a sudden attack of abdominal pain, but waited until it passed off, and then continued her work. The next day she noticed a fullness in the lower abdomen, with a little pain, which became worse as the day wore on. She then went to the dispensary, and was sent to the hospital. On examination her abdomen was tender, with some lower abdominal rigidity. Per vaginam there was a boggy feeling, with nothing else definable, except that the uterus was pushed right down towards the vulva.

On opening the abdomen it was found to be full of blood, and after clearing this out bilateral ovarian tumours, split completely across and bleeding slightly, were revealed. They were removed as quickly as possible, clots wiped out, two pints of saline put into the abdomen, and the wound closed. She was given saline per rectum through the night, and the next morning was in very good condition. Her recovery was uneventful. The tumours were submitted to the Haffkine Institute for examination, and were reported to be sarcomata.

These two cases show a remarkable lack of the shock one would rightly expect after such severe abdominal catastrophies, and their rapid and easy recoveries were as unexpected as they were gratifying.

EXCISION OF A TRAUMATIC STRICTURE

By H. L. ATTWATER, M.Chir. Camb., F.R.C.S. Eng.
HON. ASSISTANT SURGEON TO ALL SAINTS' HOSPITAL FOR GENITO-URINARY DISEASES, LONDON; AND

I. PREISKEL, M.B. Lond., F.R.C.S. Eng.
LATE SENIOR HOUSE SURGEON AT THE HOSPITAL

A MAN, aged 48, sustained a ruptured urethra in April, 1932, as a result of a motor-cycle accident. He was treated in the country by external urethrotomy. A perineal fistula developed, however, and when seen at All Saints' Hospital in September, 1932, he had an impassable and impermeable stricture, and a perineal fistula through which he was passing all his urine; the sphincteric control was good. In October, 1932, a suprapubic cystostomy was performed, and the patient sent home for the time being. In January, 1933, he was readmitted for excision of the stricture.

A Wheelhouse staff was passed from the external meatus and a metal sound retrogradely from the internal meatus. The perineum was incised upon the points of these instruments, and it was then found that the torn ends of the bulbar urethra were widely separated by dense fibrous tissue, the anterior segment in addition being displaced laterally. The fibrous tissue was excised and the urethral ends freed. The largest gum-elastic catheter that would enter the external meatus (30 Charrière) was then passed into the bladder. No attempt was made to suture the urethra; a flavine and paraffin dressing was applied and the bladder irrigated daily. The suprapubic tube was retained.

The perineal wound healed rapidly. An attempt to change the catheter failed, the tip of the new catheter engaging in a pocket; the same cause prevented the passing of a guide. A guide was passed retrogradely from the bladder with ease, and to its screw end was attached the screw end of a second guide. When this latter appeared at the external meatus the eye of a catheter was tied to it and thus caused to enter the bladder.

To facilitate subsequent changing of the catheter the following procedure was adopted: The bladder end of the catheter was made to appear through the suprapubic wound and a piece of stout silk threaded through the two eyes, after which the catheter was returned to its normal position in the bladder, and the suprapubic tube reintroduced. The end of the silk was tied to a spigot lying in the suprapubic dressing, thus giving a means subsequently of pulling the eye of the catheter on to the surface again.

After this the catheter was changed weekly, as follows: (1) Expanded external end of catheter cut off. (2) Rubber tube 18 in. long (about 12 to 15 French gauge) sutured to cut end of catheter. (3) Suprapubic tube removed. Traction on silk caused catheter to appear eye end first, followed by rubber tubing. (4) Eye of new catheter pushed firmly into lumen of other end of tube. Further traction on tube caused new catheter to enter urethra and bladder. (5) Eye of new catheter made to appear on surface of abdomen, and a silk thread tied to it as before, ready for the next change.

Although the perineal wound was superficially healed in five weeks, the catheter was retained and changed weekly until the urethra was felt to be smooth and free from any pockets. On May 9th the suprapubic tube was removed, and on May 19th the catheter. Following this, dilatation was continued weekly, at first with steels (24/28 French) and later with a Kollman's dilator (37 F.).

The patient was discharged on June 2nd to the out-patient department; urinary control was good, and the perineal fistula had completely healed. The chief object of our note is to draw attention to the method employed for maintaining an indwelling catheter for a prolonged period while sound healing is taking place. This method allows of a change of catheters without the risk, by no means negligible, of the new catheter being obstructed by folds or pockets in the yet unhealed urethra.

RESIDENTIAL TREATMENT FOR EX-SERVICE MEN.—Since 1930 the Ministry of Pensions has accepted liability for the cost of residential treatment only in cases, whether of tuberculosis or other disablement, where the condition requiring treatment at the time is accepted to be due to war service. Notice has now been sent to local authorities that before incurring expense the Ministry will have to be satisfied from a review of the service and other records in the department's possession that the condition requiring treatment can still be accepted to be due to war service. This review will be undertaken upon receipt of a certificate from the tuberculosis officer saying that arrangements have been made to provide residential treatment in a case appearing on the council's list as having been accepted on a previous occasion. This change of procedure will come into operation on Jan. 1st, 1934.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTIONS OF THERAPEUTICS AND PSYCHIATRY

At a joint meeting of these sections held on Dec. 12th the chair was taken by Dr. EDWARD MAPOTHER, president of the section of psychiatry. A discussion on the Uses and Dangers of

Hypnotic Drugs Other than Alkaloids

was opened by Sir WILLIAM WILLCOX. The important thing, he said, was to know the cause of the insomnia; the cause should be treated, and hypnotics used only when general measures failed or were inapplicable. Drugs of low toxicity included the inorganic bromides (e.g., sodium, potassium, ammonium, strontium, and calcium bromides), alcohol, phenazone and its derivatives, aspirin and salicylicaine derivatives. Combinations of these with opium preparations or codeine were often effectual. The great change since 1913 had been the production of large numbers of barbituric derivatives and the introduction of basal anæsthetics, many of which were being used as hypnotics. Other hypnotic drugs of varying degree of toxicity were the alcohol-chloral group—chloral, chloralamide, chloralose, butyl chloral, chloretone, hypnal, dormiol, isopral, ural, bromal, amylene hydrate, paraldehyde, aponal, neuronal, hedonal, avertin. The urea group included urethane, aponal, aleudrin, adalin, bromural, somnosal; and the sulphone group sulphonal, trional, tetronal. Chloral and chloralamide were good hypnotics which had dropped out of use. Avertin (tri-brom-ethyl alcohol) was as toxic as chloroform. Care and experience were required to decide on suitable doses. The members of the urea group were safe and not very toxic. The sulphone group was not much used; the drugs were slowly absorbed and there was a danger of cumulative effect.

The barbituric acid group offered a most formidable list of preparations. When a higher allyl group than ethyl was introduced the drug became much more toxic. Compounds of these drugs with analgesics were dangerous because of the risk of overdose of hypnotic while a large enough dose of analgesic was being given. Barbiturics were rapid and certain. They acted much more quickly on an empty stomach or if taken with alcohol. Idiosyncrasy might be natural or acquired; any indication of allergy, hyperthyroidism, or latent liver or renal dysfunction was a danger signal. Full doses of a basal anæsthetic were very dangerous in the presence of any of these danger signs, but a smaller dose would produce an adequate effect. Any prolonged toxic condition rendered these drugs much more active. They might produce any nerve paralysis, and in large doses coma and pneumonia. There was not much risk of cumulation, and very little tolerance was acquired. Habit formation undoubtedly occurred. If they were taken regularly every night it was common for an overdose to be taken sooner or later. Many cyclical cases had an obsession of insomnia and no drug would make them sleep. He had been so impressed by the dangers of the barbituric and sulphonal groups that he never prescribed them and thought their prescription ought to be safeguarded by regulations. No total prescription amounting to a fatal dose should ever be given to a patient. If the public were to be protected there must be a close coöperation between medicine and pharmacy.

THE CAUSE OF SLEEP

Dr. F. L. GOLLA said that no one hypnotic was universally applicable. Knowledge of the mechanism of sleep was still very scanty. The nervous system acted as a whole. Pathological and experimental lesions in the infundibular region produced pathological sleep. A diencephalic sleep centre had been described but the term "waking centre" would be more appropriate. All that we knew of sleep suggested an abeyance of the katabolic activity associated with the sympathetic system and an excess of the anabolic activity associated with the parasympathetic system. Salicylates seemed to have the special property of diminishing painful stimuli and thus acting secondarily as hypnotics. The diencephalic centre was stimulated by sensory impulses from many directions. Insomnia might be due to excessive cortical activity, and for this there was no need to use drugs strong enough to depress the diencephalon. An analysis of the introspections of trained subjects under various hypnotics would be of the greatest value. The failures and dangers of hypnotic drugs would be greatly diminished by increased knowledge.

Prof. J. A. GUNN said that sleep might be regarded as a rhythmic depression of the activity of the brain and insomnia as due to one or a combination of two causes: abnormal afferent stimuli affecting the brain at a time when its depression was due; or increased excitability of the brain cells. The rational treatment of the first type was to remove the stimuli if possible. Increased excitability might be congenital or acquired; there were brains which were easily kept awake from childhood. Excitability could be increased artificially, as by caffeine, ephedrine, and high blood pressure. Bromides were especially valuable for normal brains kept awake by such stimuli as worry. Analgesics might produce sleep by reducing afferent stimuli and could usefully be combined with hypnotics, but a fixed inflexible combination was, he agreed, dangerous. A small analgesic dose of morphine combined with chloral might be more effective than a large dose of either alone. Combinations of hypnotics acting at different points were also useful. More knowledge was needed of the site of the insomnia and the site of action of the drug. Drugs grouped as pharmacologically identical showed fine differences of physiological action. Dosage in relation to body-weight ought to be more carefully regulated. It would be worth while for someone to analyse the published cases of hypnotic poisoning and search for differences in the site of action. Different tissues produced different degrees of tolerance to the same drug; the liver and kidney might differ from the brain. The increase of cases of hypnotic poisoning deserved attention. These drugs, and prescriptions for them, were too easy to get. There was no pharmacology without toxicology; no drug was "therapeutically active and non-toxic."

THE CLINICAL POINT OF VIEW

Dr. P. K. MCCOWAN said that paraldehyde was the safest hypnotic. Chloral hydrate was extremely useful but needed cautious administration in the debilitated and old. Addiction was rare, but of all drugs of addiction it was the most likely to produce serious changes. Sulphonal was useful and safe if its tendency to cumulation was remembered. It should not be used for more than about a week. Trional acted more quickly and was rather less cumulative. The action of all the barbiturates was very similar. Their chief danger was that the optimum hypnotic dose was about 50 per cent. of the minimum lethal dose. Nembutal could be used as a sedative or hypnotic; used intelligently it was fairly safe. It was well to familiarise oneself with one group of drugs, as experience in its use was of more importance than the specific action of any drug.

In conjunction with glucose and insulin, barbiturates were also safe for prolonged narcosis. They inhibited brain oxidation of glucose and lactic acid, thus interfering with the carbohydrate metabolism. A similar effect took place in the liver and heart. The result was a condition of ketosis which could be prevented by glucose and insulin. Somnifaine administered intramuscularly was the most useful drug for this purpose. A certain proportion of patients taking sedatives in the usual way sooner or later showed ketonuria which could be cleared up by glucose and insulin. These might well be given as a routine when a hypnotic was used for anæsthesia. Addiction risk was no greater with the barbiturates than with other drugs, but it must be borne in mind. Sedative and hypnotic drugs should be used as a last and not as a first resort. In mental hospitals, for instance, the amount used could be considerably reduced by occupational and hydrotherapy.

Sir **James Purves-Stewart** stressed the occasional unexpected toxic effects of barbituric drugs in ordinary doses and quoted three cases—two due to medinal and one to allonal. The symptoms had all cleared up directly the drug was withdrawn. None of the patients or their medical advisers had volunteered a history of drug-taking. In full doses these drugs seemed to exercise toxic effects on the whole brain, but in smaller doses they might have a selective action on small groups of cells.

A DEFENCE OF THE BARBITURIC GROUP

Dr. R. D. **Gillespie** said that the allegation of danger from barbituric drugs depended on the assumption that they were dangerous in therapeutic doses, or that they caused suicide or that they produced addiction. He had made an investigation of the entire literature, so far as he knew. In the only previous survey of the records which had been published in this country there had been an error of nearly 60 per cent. in the death-rate ascribed to these drugs, owing to counting cases twice, and other errors. Dr. Gillespie had found that the total number of fatal cases recorded up to date was 157, nearly all due to very large doses taken with suicidal intent. He had collected only five fatal cases due to ordinary doses of veronal, and in three of these Sir William Willcox had admitted doubt whether veronal had played any part or not. There were also two pernocton deaths, but their deaths differed from those of barbituric cases generally and both had died suddenly after major operations. No case of nembutal poisoning had been recorded except for Sir William Willcox's statement this year that deaths had occurred. There was no case on record where repeated administration of normal doses had been fatal, and no case which would justify the statement that these drugs were dangerous. Idiosyncrasies, of course, existed, but usually declared themselves in good time by toxic signs. The contra-indications were definite. The barbituric group came eighth on the list of drugs used for suicide and accounted for 0·26 per cent. of suicides in 1931; it was surprising that they had played so small a part considering the advertisement they got. To take a drug in therapeutic doses every night for four months to relieve insomnia was not addiction, and some of the ascription of addiction to barbiturates was a result of this looseness of terminology.

Dr. G. B. **James** said the first stage of the practitioner's attitude towards prescribing these drugs was a brief one of intense apprehension. The second stage might last too long: the early fears gave place to a somewhat indiscriminate use of hypnotics. This was a dangerous stage. His doses tended to increase and he did not always know much about the substance he was using. The third phase was one of greater caution, often introduced by some accident or case of idiosyncrasy. He thereafter adhered to a short list of well-tried hypnotics with which he was thoroughly familiar. Vigilance was essential, and smaller doses than those commonly given could usefully be adopted in many cases. The bromides should only be given in large doses to specially selected cases. There was so much of the personal in the prescription of hypnotics that regulations would be difficult to establish.

Dr. A. **Meyer** said that many so-called primary cell degenerations were due to accidental or post-mortem or technical causes; with greater experience observers gained greater caution. He showed sections of the central nervous system from experimental animals which had died from ether narcosis and cyanide of potassium. They displayed softening in various parts of the cortex, substantia migra and globus pallidus. Carbon monoxide showed the same effect. The same results could follow other kinds of asphyxia. It was the anoxæmia—including the condition rendering oxygen unavailable for oxygenating processes—which acted as the pathogenic factor and determined the effects. It was uncertain whether similar effects were to be ascribed to hypnotics.

Dr. **Desmond Curran** described an investigation into the value of nembutal for patients at the Maudsley Hospital. During fourteen months 328 patients had received it. Their psychiatric conditions had varied widely, and they had formed a representative series except for the exclusion of irrecoverable cases. No more than grs. 13½ was given in 24 hours or grs. 6 as a single dose. It had proved of great value as a hypnotic and for minor operations in apprehensive or resistive subjects. It must be given in concentrated solution on an empty stomach. The action usually appeared in half an hour and was profound for another half an hour, after which the patients became drowsy and readily awakened by stimuli. It was roughly as effective in doses of grs. 4½ but not so certain as paraldehyde in doses of 2 drachms. It was useful for patients who could not get off to sleep and who worried about this. No true tolerance had been seen, but there was individual variation. Only two patients had shown alarming symptoms, and these had been physically debilitated. A few had complained of nausea, but after-effects were strikingly absent. Quite large doses of other drugs had been given in combination. Nembutal in doses of grs. 3 to 6 was an excellent hypnotic and free from unpleasant after-effects.

Sir **Maurice Craig** said his experience had been widely different from that of Sir William Willcox, which was accounted for by Sir William's admission that he never prescribed the barbiturates. One of the most absurd and unscientific things about this controversy was the habit of deducing generalisations from a few cases. What did two or three cases of ill-effects compare with the thousands and thousands of people who took barbiturates? It was astounding to hear that totally untrue statement repeated—that persons who regularly took hypnotics commonly ended in suicide. If that were true, the papers would contain nothing else. In Sir Maurice's 40 years' experience he had known people holding high positions who were quite unable to do their work without their hypnotic, and he had never seen a barbiturate-taker become an addict. An addict was never an addict to these drugs alone. He would be very sorry indeed to see any restrictions governing the barbituric group. Small doses were infinitely more valuable than large.

Sir WILLIAM WILLCOX replied, saying he saw many very sad cases and thought Sir Maurice Craig and Dr. Gillespie regarded the dangers too lightly. The barbituric group of drugs wanted using with great care. He had met with many cases of addiction.

SECTION OF TROPICAL DISEASES AND PARASITOLOGY

AT a meeting of this section held on Dec. 7th, Dr. H. S. STANNUS, the president, being in the chair, a discussion on

Avitaminosis (B Group) in Tropical and Temperate Countries

was opened by Miss HARRIETTE CHICK, D.Sc., who sought to correlate laboratory work on the various members of the vitamin-B complex, with clinical experience. Only vitamins B_1 and B_2 (B and G of the American workers) were sufficiently circumscribed and well-defined to be worthy of discussion in this connexion. These two vitamins had wide resemblances in distribution and also striking differences; egg white, for instance, was rich in B_2 and not in B_1, while wheat germ was rich in B_1 and poor in B_2. It was important to ascertain how far the B_1 and B_2 deficiencies of laboratory animals were the true analogues of beri-beri and pellagra respectively in man. A theory of vitamin-B_1 deficiency sufficiently explained the occurrence of beri-beri among rice-eating communities in the Philippine Islands and in Java, but not, on the testimony of a number of observers, in India. Beri-beri only occurred among populations whose staple cereal food is white wheat flour, when the rest of the food is very poor and ill-balanced, as in Newfoundland, Labrador, and Iceland. Here, too, the observed facts agreed well with a theory of vitamin-B_1 deficiency. Dr. Chick said that pellagra occurs when the diet consists largely of maize, though it is sometimes seen on other diets. The laboratory examination of various cereals for their B_2 value, by means of growth tests on rats, showed that rice is actually poorer in this factor than is maize; but human rice eaters seldom developed pellagra. It seemed probable therefore that pellagra is not a straightforward deficiency of vitamin B_2, though it is commonly held to be so in the United States as the result of the work of Goldberger and his colleagues. They produced a dermatitis in rats and a condition called "black tongue" in dogs, by means of a pellagrous diet, and found that the individual foodstuffs which cured these conditions also cured human pellagra in relatively the same proportions. Certain other diseases had also recently been referred to a deficiency of vitamin B_2 because they had been cured with liver or yeast; but in such clinical trials it should be recognised that both yeast and liver contain far more than B-vitamins. Pink disease, otherwise known as Swift's disease or acrodynia, had been cured by this means in various parts of the world; it was of interest that in one case at least its occurrence was associated with consumption of a maize diet. Other diseases reported to be cured by yeast or liver were some forms of anæmia, sprue, and epidemic dropsy.

Dr. Chick pointed out that a vitamin deficiency might be due to an actual deficiency or to an inability to absorb what was available; the significance of diarrhœa and alcoholism in this connexion should not be lost sight of, as, for instance, in pellagra and alcoholic neuritis. The occurrence of alcoholic pellagra was described only where maize spirit was consumed.

Prof. R. A. PETERS spoke about the therapeutic use of vitamin B_1, about which definite knowledge was only just being obtained, though the relationship of beri-beri to food deficiency had been recognised for 40 years. The first concentrates were prepared by Jansen and Donath in Java, but within the last year really concentrated preparations had been made, and the time was now ripe for working out how they might best be used therapeutically, and whether there was any application for them in temperate climates. In the United States it was held that children are often deficient in this vitamin. A concentrate of vitamin B_1 might profitably be tried in cases of œdema; these were rare and it was difficult to find controls, but suitable cases could probably be found in this country if looked for. Highly purified preparations of vitamin B_1 had now been made in five or six laboratories, chiefly from rice polishings; in two laboratories, of which the biochemical laboratory at Oxford was one, yeast was the parent material. A crystalline hydrochloride had been obtained of a substance which contains sulphur, and which is active for pigeons in a dose of 2 γ.

The earliest symptom of vitamin-B_1 deficiency observed in pigeons was anorexia; the symptoms which followed were chiefly associated with the central nervous system. The fact that they could be cured in half an hour by intracranial injection of the vitamin made it unlikely that histological change had taken place. Peripheral lesions were rarer, and the œdematous chronic condition, described by McCarrison, was rarely seen, though œdema could be promoted by administration of salt. Prof. Peters said that a dose of the vitamin 30 to 40 times the minimum dose was not harmful to pigeons, and deduced that the risk of hypervitaminosis, if it exists, is comparatively remote.

Vitamin B_1 had in the past been related to carbohydrate metabolism and to oxidation. Definite proof had now been obtained that there was an oxidative lesion of the lower part of the pigeon's brain, which could be demonstrated, particularly with a lactic acid substrate, and cured with the vitamin, in vitro. The severity of symptoms in the bird ran parallel with the degree of depression of oxidation found in the brain, and there was increased lactic acid in the blood. A Japanese worker had found increased lactic acid in the blood of human beri-beri patients. Prof. Peters said that clinicians should make a proper trial of vitamin B_1 in the form of concentrates, in anorexia, œdema, palpitations, and breathlessness, and in neuritic and convulsive conditions; if the therapy is going to succeed there should be improvement in two to four days, when 2 mg. of nearly pure vitamin had been given. Such concentrates could easily be prepared commercially.

Dr. LUCY WILLS pointed out that there was no regular and specific association of anæmia with any known vitamin deficiency in man or animals. For the cure of pernicious anæmia, highly potent liver fractions could be obtained, which were devoid of vitamin B_2.

Cases of tropical macrocytic anæmia, with normal gastric juice but with the blood picture of pernicious anæmia, were cured with marmite, which Strauss and Castle found to contain the extrinsic but not the intrinsic factor for true pernicious anæmia. Trial of various fractions of the vitamin-B complex in tropical macrocytic anæmia excluded vitamins B_1, B_2, and B_4, and, finally, it was found that though the yeast derivative, marmite, was active, whole untreated yeast was inactive. The vitamin-B complex had thus still to prove its claim to any significance in connexion with anæmia.

Prof. S. J. COWELL marshalled the very contradictory evidence, connecting any part of the vitamin-B complex with gastro-intestinal disturbance, in the sense of either hurry or delay, and concluded that there was no evidence of any specific relationship. Cure of an acute gastro-enteritis of children, with very toxic symptoms, had been recently described from Jerusalem, by means of injection of a vitamin-B_1 concentrate; the very severe anuria was at once relieved. The fact that intestinal stasis in man often yielded to treatment with wheat embryo was no proof that the factor responsible for the cure was any part of the vitamin-B complex.

Dr. S. LEVY SIMPSON enumerated the primary disorders which might give rise secondarily to pellagra. All of these were of the nature of gross gastro-intestinal disturbance. The various ways in which these lesions might promote pellagra were suggested: by necessitating a diet poor in vitamin B_2; by the exclusion of the gastric digestion; by change in the intestinal bacterial flora; by deficient absorption; or by destruction of the vitamin by alkalis. Dr. Levy Simpson described a case of an Englishwoman in whom pellagra with typical skin eruption developed, following a partial gastrectomy for duodenal ulcer; treatment with a vitamin-B_2 concentrate from egg white was rapidly followed by a clearing of the skin condition.

Dr. C. C. UNGLEY spoke very briefly of the use of some yeast fractions in pernicious anæmia.

Dr. MARGARET BALFOUR mentioned the frequent occurrence of premature births among sections of the community in India, whose diets on investigation appeared to be low in vitamin B_1.

Dr. W. CRAMER disagreed with Prof. Cowell, holding that there was evidence for specific action of the B-vitamins on the gastro-intestinal tract.

Dr. G. W. BRAY described the occurrence of infantile beri-beri in a Pacific island and its prevention with the yeast from palm toddy.

Prof. PETERS mentioned that the appearance of rats suffering from deficiency of vitamin B_4 suggested pink disease, but that Dr. J. C. Spence had said that pink disease was not cured by marmite.

Dr. C. L. COPE described the successful treatment of œdema in a case of nephrosis with a vitamin-B_1 concentrate.

The PRESIDENT, in closing the discussion, remarked that he could never understand how a deficiency could be supposed to produce a series of positive symptoms, as in pellagra, these symptoms being much more suggestive of an intoxication.

KING GEORGE HOSPITAL, ILFORD.—The housing committee of the London County Council has recommended that a contribution of £5000 should be made towards the cost of extending this hospital. The council contributed £10,000 for the same purpose in 1928, and an undertaking has been given that the council's grant will be used specifically for providing additional bed accommodation.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

AT a meeting of the fever group of this society on Dec. 1st, Dr. H. STANLEY BANKS delivered his presidential address on the

Use and Misuse of Antitoxin

Text-book teaching about dosage and route of administration of diphtheria antitoxin should, he said, be revised in the light of (1) increasing experience of intravenous injection; and (2) production of a highly concentrated serum largely free from extraneous protein. Since 1895 there had been a gradual tendency to the use of larger doses, often without proper discrimination between the needs of the mild non-toxic case and the hypertoxic or malignant case. In the former, it was sufficient to combat toxin which might be absorbed from the lesion after treatment was instituted. A dose of 2000 to 8000 units intramuscularly was sufficient in experienced hands for such cases. The hypertoxic or malignant case with extensive or rapidly spreading membrane and periglandular infiltration of the neck was quite different. In such cases an attempt should be made to neutralise not only circulating toxin, but also the toxin which had already become loosely bound to tissue cells. There was ample evidence, experimental and clinical, that this was possible provided that combination with tissue cells was not too far advanced. A large excess of antitoxin everywhere available throughout the tissues was, however, necessary for this effect to be achieved. The dose recommended for this purpose was a single intravenous injection of 50,000 to 150,000 units. Repeated injections were unnecessary. Nothing was achieved by giving any part of the dose intramuscularly, unless for any reason the intravenous route failed. The technique in young children was not easy, but could be much simplified by the use of a suitable needle and syringes with peripheral nozzles. Antitoxin was, he thought, often wasted in fever hospitals on cases erroneously certified as diphtheria. Although these formed as much as 25 per cent. of diphtheria admissions, it was right and proper that cases under suspicion of diphtheria should be sent into hospital. Provided they were maintained under expert supervision in hospital, antitoxin could safely be withheld and the Schick test performed. This did not apply to the district case when the medical practitioner should always give antitoxin or send the case into hospital if diphtheria was suspected. Passive immunisation of contacts should not be undertaken lightly, without Schick, swab, and virulence tests.

Scarlet fever could be advantageously treated by intravenous injection of scarlatinal antitoxin. In two different fever hospitals, by this means, the scarlet fever work had been improved beyond all recognition. A preliminary intradermal test with horse serum should be done and all cases with a history of asthma, eczema, or previous serum injections should be excluded. Not only toxic symptoms were neutralised but septic complications were almost totally prevented. Even in late septic cases, so long as faucial œdema was present, quite dramatic results could be obtained.

In cerebro-spinal fever, antimeningococcal serum should be given intravenously in large dosage (up to 100 c.cm.) as well as intrathecally. A highly specific antimeningococcal serum had not been produced since the war; large doses were therefore necessary. Good results reported from Rumania appeared to be associated with special methods used in the production of the serum, as well as with intensive therapy by all routes. Meningococcus toxin had recently been produced in U.S.A., and a meningococcus antitoxin prepared by means of it was at present on trial in this country.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY

At a meeting of this society, held on Dec. 7th, Dr. Walter Broadbent read a paper on

Valvular Disease of the Heart

He discussed the treatment of rheumatic fever, and, in very acute cases in children, recommended anti-streptococcic serum by the mouth on an empty stomach. Careful treatment with prolonged rest in bed had greatly lessened the cases of valvular disease in adults. Aortic regurgitation was the first of the valvular diseases to be differentiated, Dr. Corrigan of Dublin in 1832 giving an excellent description of it. Rheumatic fever was the main cause of aortic valve disease; syphilis came next. The most striking physical signs of aortic regurgitation were the marked pulsation of the carotids and the hypertrophy of the heart. The amount of regurgitation could be estimated by the largeness of the artery and the collapsing character of the pulse. The systolic pressure was high, and the diastolic extremely low. There was nearly always a systolic as well as a diastolic murmur, but this did not imply stenosis. In 74 post-mortems of cases of aortic regurgitation Thayer only found 3 with any stenosis. In quite a large number a presystolic murmur could be heard at the apex and a thrill felt. This was first noted by Austin Flint in 1862, and the murmur is called after him. There was no mitral stenosis found post mortem in these cases. Aortic stenosis was rather rare; it was associated with a small pulse and a hypertrophied heart. Cerebral embolism was more liable to occur following aortic stenosis than follows any other valve lesion.

Mitral regurgitation was nearly always due to rheumatism. In children every systolic murmur was important, since any endocarditis of the mitral valve might develop into stenosis. In adults many such murmurs were negligible. In the presence of a good first sound a systolic murmur did not indicate any material regurgitation. As the first sound was encroached upon by the murmur, so the regurgitation was greater, and when the murmur replaced the first sound, it was considerable. Possibly by that time the heart would be irregular from fibrillation, but that mattered much less in this than in aortic disease or mitral stenosis.

Of all valvular diseases mitral regurgitation was the most amenable to treatment; this lesion had made the reputation of digitalis. Mitral stenosis had been divided into three stages by Sir William Broadbent: (1) a presystolic murmur, a short first sound, and a second at the apex; (2) absence of a second sound at the apex and lengthening of the presystolic murmur to fill up the whole diastole, the murmur being divisible into two, like a diastolic and presystolic; (3) disappearance of the presystolic murmur, leaving only a short loud first sound, rapid and irregular from fibrillation. If improvement took place the presystolic murmur returned. In treatment digitalis was less useful than in regurgitation and the dosage should be less. Vasodilators and general tonics were of help. Mitral stenosis with regurgitation was less serious than mitral stenosis, since the heart could hypertrophy more, not being hampered by the small size of the left ventricle as in pure stenosis. Ulcerative or bacterial endocarditis attacked the aortic valve more than any other, but might arise on the wall of an auricle and produce no murmur. In most cases there was antecedent valvular disease. In a case of gonococcal endocarditis of the pulmonary valve the murmur was a loud harsh one, systolic and diastolic to the left of the sternum, simulating that heard in patent ductus arteriosus. So far there seemed to be no successful treatment for this lesion.

REVIEWS AND NOTICES OF BOOKS

Nasal Accessory Sinuses Roentgenologically Considered

By Frederick M. Law, M.D., Roentgenologist, Manhattan Eye, Ear, and Throat Hospital, New York. Annals of Roentgenology, Vol. XV. New York: Paul B. Hoeber. 1933. Pp. 215. $10.00.

This book has been compiled for two classes of reader, the roentgenologists and the rhinologists. To the former the author has tried to show the kind of information which will be of value to the surgeon, and to the latter he explains the practical side of the technique and the difficulties of interpretation which may arise. The following positions are employed: the so-called nose-forehead, the nose-chin, the vertex-mental, and the lateral positions, and, more rarely, the two oblique positions. If in the two first-named positions, respectively the nose and forehead, or the nose and chin, are in contact with the film, it is clear that the positions must vary with the shape of the face; but Dr. Law gets rid of this difficulty by the use of measured angles, 23° and 45° respectively, between the axis of the rays and a base-line taken from the external auditory meatus to the outer canthus. The skiagrams are taken with the head in the horizontal position. The disadvantage of this position is that a "fluid-level" in the sinuses cannot be shown; hence many radiologists prefer the upright posture. Dr. Law agrees with the majority of workers that it is not often helpful to fill the sinuses with a radiopaque substance, for abnormalities such as thickened mucosa and polypi can be well demonstrated without it, but he quotes in full Proetz's displacement method for filling the sphenoidal and posterior ethmoidal cells. In the interpretation of the films considerable stress is laid on the appearance of lateral views, especially for the diagnosis of ethmoidal disease. The skiagrams reproduced number 197, and afford ample opportunity of observing and comparing a great variety of normal and pathological conditions. It is unfortunate, but inevitable, that much of the finer detail is lost in reproduction, and this loss is increased by the fact that the pictures have been reduced to about one-half of the natural size. They form a valuable collection none the less, the series of 34 pictures demonstrating development from birth to adolescence being of especial interest. Three key-plates are provided, showing the main anatomical features in the postero-anterior, lateral, and vertex-mental views. Of the former, it is not stated whether the subject assumed a nose-forehead or a nose-chin position, and the angle of the pictures is nowhere stated. A pointer to the feature of interest would have added to the value of many of the plates. The work represents a great amount of labour, and deserves success.

Operative Surgery—Abdomen and Rectum

By MARTIN KIRSCHNER, Professor of Surgery, University of Tübingen. Translated by I. S. RAVDIN, B.S., M.D., Professor of Research Surgery, University of Pennsylvania; Surgeon, University Hospital, Philadelphia. London: J. B. Lippincott Company. 1933. Pp. 569. 50*s*.

THIS beautifully printed and illustrated volume is a companion to the author's work on general surgery. It describes the operative procedures in use by Prof. Kirschner at Tübingen University, and has been well translated by Prof. Ravdin. General principles and technique are dealt with in the early sections, after which comes systematic consideration of operations on the different regions of the alimentary canal, liver, spleen, and pancreas. Every step is carefully explained and nearly every step is illustrated. Most of the pictures are coloured. The book is of great interest to English surgeons inasmuch as methods with which they may not be thoroughly acquainted are set out in detail. As an example may be mentioned resection of the rectum with preservation of the anus and restoration of continuity. The author advocates and practises this operation wherever feasible, and seems justified in his choice. All through we see familiar problems exceedingly well presented from a new angle. Most active surgeons will wish to possess this book if they take an opportunity of examining it with the care it deserves.

Text-book of Pathology

Third edition. By ROBERT MUIR, M.D., F.R.S., Professor of Pathology, University of Glasgow; Pathologist to the Western Infirmary, Glasgow. London: Edward Arnold and Co. 1933. Pp. 957. 35*s*.

Prof. Muir's text-book has now been in extensive use in medical schools for about nine years, and there is no better known work of its kind in this country. Its outstanding merit has repeatedly been proved to teachers of pathology. For its size it contains an astonishing amount of information, so that notwithstanding its original design as a student's text-book, it has often proved a very efficient work of reference to the pathologist. The book has had considerable influence on the teaching of pathology in this country during the last few years, and in this regard one of its special merits has been the critical and conservative selection of scientific material for inclusion.

Although the general form of the work has not been altered, a very thorough revision has been carried out in the preparation of its third edition. Much new matter has been evenly distributed over the volume, increasing its size by more than 80 pages. Few sections have been left untouched. Amongst the notable additions are an extension of the section on renal œdema to cover the theory of protein loss in relation to this condition, and new sections on asbestosis, the relation of tumours to radiation, the metabolism of tumours, and liver efficiency tests. A more detailed account of the histology of the neuroglia has been introduced, embodying the teaching of the Spanish school of histologists. Several parts of the work have been rearranged, including the sections dealing with rheumatic lesions of the heart and those on tumours of the brain. In the latter the Bailey and Cushing classification of gliomas has been adopted. The classification of nephritis has also been revised and several new illustrations have been added.

The Care and Feeding of Adults

With Doubts about Children. By LOGAN CLENDENING. London: John Bale, Sons and Danielsson, Ltd. 1933. Pp. 360. 6*s*.

Dr. Clendening is an American physician whose book is written as much for the general public as for fellow practitioners. It is amusing and full of that enlightened common sense which accrues slowly to those who constantly deal with human beings, sick and well. The author endeavours to arrest the modern tendency, even commoner on his side of the Atlantic than on ours, to seek for régimes of regulated diet, exercise, and sleep, often far removed from the normal, which shall ensure a healthy, happy, and prolonged life for their devotees. He shows, with a wealth of proof from authoritative sources, how slender is the basis of many widely held beliefs, such as the danger to health of tobacco, meat, alcohol, salt, and no exercise. He also emphasises the ease with which even those trained to a scientific outlook may, if engaged in clinical work, confuse cause and effect, and the fact that many tiresome if not actually deficient diets, for the value of which there is no real evidence, are medically imposed on patients with high blood pressure, rheumatic pains, mild obesity, and many other conditions. Dr. Clendening points out that it is not only outside the profession that mental association may take the place of reasoning. We agree with him that the practice of periodical "health audits" for the apparently healthy is not without its own danger of focusing the victim's attention on slight deviations from the normal, and so precipitating a breakdown.

The book is to be recommended for two reasons: it clears away the tangle of diets and régimes which are not based on proven facts; and it emphasises the dietetic aspect of treatment where it is all important, as in diabetes, renal defect, and gastro-intestinal lesions.

The 1933 Year Book of Radiology

Diagnosis. Edited by CHARLES A. WATERS, M.D., Associate in Roentgenology, Johns Hopkins University; *Assistant Visiting Roentgenologist,* Johns Hopkins Hospital. *Therapeutics.* Edited by IRA I. KAPLAN, B.Sc., M.D., *Director, Division of Cancer,* Department of Hospitals, New York; *Visiting Radiation Therapist, Bellevue Hospital.* Chicago: The Year Book Publishers, Inc. 1933. Pp. 804.

THIS is the second issue of an ambitious year book. Many important advances in radiology, as in other specialties, receive their first publication in the proceedings of societies which are only accessible to the man of many tongues and considerable leisure. Other readers will be grateful for the opportunity here given to survey the vast field of current radiological literature with little effort. The material has been sifted and judiciously selected; the book is no mere compilation of colourless abstracts, for, here, the abstracts, however brief, have been compiled in the spirit of the original articles which they summarise. The result is not only a complete work of reference to developments in every quarter of the globe but a readable text-book. The authors' comments, when they make any, are sound. In particular we would note, in the introduction to Part II., the section on radiotherapeutics, where Dr. Kaplan gives a judicious survey of radiotherapy as applied to cancer.

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THE LANCET

LONDON: SATURDAY, DECEMBER 23, 1933

CYSTICERCOSIS SIMULATING EPILEPSY

CYSTICERCOSIS in man is caused by the ingestion of eggs of *Tænia solium*, and the consequent invasion of the body by the embryos. There are two tapeworms of which man is the sole host in the adult stage of the parasite, *Tænia saginata* and *T. solium*. The former normally passes its cysticercus, or bladder-worm, stage in the ox, and is not known to give rise to human cysticercosis. On the other hand, the embryos of *T. solium*, normally developing in the pig, readily invade the human body, and attain larval maturity there. These cysticerci may be found anywhere—in the subcutaneous tissues, muscles, and organs—but they have a predilection for the brain, where they select in particular the grey matter. It is clear that the cysticerci which parasitise man have entered a blind developmental alley, and, in the absence of cannibalism, are lost to their race; but their unfortunate hosts will derive little comfort from this consideration. In a communication to the Royal Society of Tropical Medicine and Hygiene on Dec. 14th, which Sir LEONARD ROGERS, from the chair, described as likely to make medical history, Colonel W. P. MACARTHUR reviewed some startling sequelæ of cysticercus invasion in man. He gave convincing proof that many military patients who develop symptoms that were formerly attributed to idiopathic epilepsy are really victims of cysticercosis. As the outcome of an investigation into the occurrence of epilepsy in the Service, over 60 military cases of proved cysticercosis have been collected. It is significant that 20 of these were diagnosed in Millbank Hospital in the present year, and that eight soldiers who returned from India during the past trooping season with a history of fits—in six of them certified as due to "true epilepsy"—have already been proved to suffer from cysticercosis. The epileptic seizures caused by this parasitic invasion of the brain have no symptom which distinguishes them from the recognised varieties of epilepsy.

An extraordinary feature of cysticercosis is that the parasites commonly are present in the body for a period of years before brain symptoms become evident. Colonel MACARTHUR's explanation of this surprising latency is that the living cysticerci, in the numbers ordinarily found in the brain, are more or less tolerated by the host; but that after their death they act as foreign irritants. The duration of life of individual cysticerci in the same host may differ by years, and the successive deaths of parasites in various parts of the brain would account for the striking alterations in the character and extent of the brain symptoms which a patient may exhibit at different times. In support of this theory Colonel MACARTHUR demonstrated in preparations from fatal cases of cysticercosis active destructive changes taking place around dead and degenerating cysticerci in the brain. He quoted also the results of a study of the conditions underlying the appearance of "new" palpable cysts in the muscles of persons whose infestation had lasted for as long as seven years before these "new" cysts showed themselves. When such cysts were excised as soon as they had become manifest, they were found to be formations of long standing. In each the contained larva was dead and degenerating, and the cyst capsule tense with fluid; to the consequent expansion of the cysts is attributed the fact that they become palpable at a late stage. In addition to epileptic attacks, cerebral cysticercosis may give rise to a wide variety of mental and nervous symptoms, and the considered diagnoses of patients in this series who eventually were proved to suffer from cysticercosis included acute mania, melancholia, delusional insanity, and dementia præcox, as well as cerebral tumour and disseminated sclerosis. The cysticerci found in the brain of some of these patients numbered as many as 200. Although infestation may be contracted in England, as is shown by the case of one soldier who has never left this country, generally it originates abroad. India, Egypt, and Malaya were definitely implicated in the series of cases cited, and probably other countries as well, but because of changes of station during the long presymptomatic period it is sometimes impossible to say where the disease was contracted. In the great majority of cases there is no present evidence nor any history of intestinal tæniasis.

A most important aspect of the problem is the possible extent of cysticercosis in England, for there is no reason to suppose that the disease is in any way peculiar to troops. In existing conditions, indigenous cysticercosis is unlikely to occur in this country, except as a chance infestation, like the example mentioned above. There are many people in Great Britain, however, who have been exposed to some risk of contamination abroad—discharged soldiers and sailors of the regular forces, the tens of thousands who served during the late war, and civilians who have resided overseas. If a diligent search in mental hospitals, institutions for epilepsy, and general hospitals were carried out by persons who have studied cysticercosis, especially in its more elusive forms, it is probable that many unsuspected cases of the disease would be brought to light.

No medicinal treatment has been found effective in cysticercosis. Indeed, Colonel MACARTHUR's observations on the changes and increase in size of the cyst following the death of the parasite, suggest that to kill off large numbers of parasites at the same time—if a chemical of lethal effect is discovered—might well make matters worse. As regards surgery, the large number and wide distribution of parasites found in the brain post mortem does not encourage a general resort to operative treatment. In actual practice, a temporary amelioration of symptoms after operation has been followed by death in *status epilepticus*.

At any rate, it is impossible to appraise the final result of operative treatment until time has been given for any other parasites in the brain to die off, and this may mean years of observation. None the less, there are definite and practical advantages in establishing a diagnosis of cysticercosis. In the Army this disease if contracted abroad is rightly regarded as attributable to military service, and therefore a responsibility of the State. To any patient and his family the discovery of an organic cause for a supposed idiopathic epilepsy is gratifying. And further, when mental deterioration in cysticercosis has progressed so far that the subject becomes certifiable as insane, it is an indescribable relief to all his family and connexion—even though the unfortunate victim himself may gain no benefit—to know that any possible slur of familial lunacy has been removed.

THE NURSERY SCHOOL QUESTION

THE publication of the volume[1] on infant and nursery schools completes the trilogy known as the Hadow report; from the medical standpoint it is perhaps the most interesting of the three, for it covers a period, that up to 7 years of age, which is critical both in physical and mental development. In the appendices will be found an account of anatomical and physiological development of children between 2 and 7 years by Prof. H. A. HARRIS, and of emotional development by Prof. CYRIL BURT and Mrs. SUSAN ISAACS, which should be of real value to medical practitioners. As the report wisely points out, the problem of the physical and mental welfare of children under 5 is one in the solution of which the nursery school constitutes only one factor. Fundamentally it depends for its complete solution on better housing conditions; child welfare centres have a part to play, and there is also required efficient educational work in housecraft and infant care. Whilst something is being done in all these directions the ground is still inadequately covered. Housing conditions for many are far from satisfactory; hygiene teaching is only in its infancy; and whilst child welfare work is coping efficiently with the problem of the child up to 1 or even 2 years of age, there is no adequate supervision of the child from 2 up to the age when he enters school. Only 13 per cent. of children between 3 and 5 years of age are in attendance at school, and the hiatus at this point is large. The school medical service still finds too many entrant children suffering from defects which might have been ameliorated in whole or in part in earlier years.

The Hadow Committee have refrained from expressing any definite opinion how this gap should be filled, but the tone of the report gives the impression that a possible solution of the difficulty lies in the opening of more nursery schools and classes. They suggest that the nursery school should primarily meet the needs of children who live in districts where housing and general economic conditions are below par. This conclusion should meet with little opposition, and the further suggestion that has been mooted in some quarters that the arrangements for slum clearance might include the provision of sites for nursery schools is only the practical application of the committee's recommendation. They also advocate the establishment of such schools in districts where conditions are more favourable, as centres in which problems connected with the general development and nurture of children may be investigated. In such districts the urgency of the need on physical grounds is, of course, not so great, but in view of the better modern understanding of the factors that affect mental and moral development in the earlier years there is surely a case for the extension of nursery schools even to what may be regarded as less necessitous areas. The prevention of maladjustment is as important as the prevention of physical disease or defect, and the need for this is not confined to slum areas.

Practical experience in areas where nursery schools and classes are already in being shows that they have a value beyond their immediate purpose. Their establishment has been found to create on the part of parents a greater interest in the development of their children, a greater desire for knowledge in matters relating to child care, and a greater interest in school activities generally; teachers can do much to foster these by establishing regular meetings for mothers at which members of child welfare and school medical staffs share in the teaching. There are great possibilities in the future for nursery schools, not so much as schools in the strict sense but as educative centres for parents and children, linking together the child welfare and the school medical service.

THE DUODENAL TUBE IN INTESTINAL OBSTRUCTION

ONE of the most formidable complications of acute intestinal obstruction is the accumulation of enormous quantities of fluid in the stomach and small intestine. After an operation for the relief of obstruction the surgeon often feels that the recovery of normal peristalsis is prevented by continuous overdistension of the muscle wall of the gut, while gastric dilatation and persistent vomiting distress and exhaust the patient. Unless some means of keeping the stomach empty is adopted, the patient almost certainly dies. C. H. MAYO is quoted as having said that he would rather see a stomach-tube than a stethoscope hanging round the neck of his surgical intern. But however enthusiastic one may be about the effects of repeated gastric lavage, it cannot be described as ideal from the point of view either of the patient or of the house surgeon and its effect on *intestinal* dilatation is very slight. Many surgeons now advocate the passage of a duodenal tube, which can be left in situ for days at a time, and through which the stomach contents can be repeatedly aspirated. At the British Medical Association discussion on intestinal obstruction in 1932 this procedure was advocated by several of the speakers, notably by Sir William Wheeler.[1]

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[1] Report of the Consultative Committee on Infant and Nursery Schools. H.M. Stat. Office. 2s. 6d.

O. H. Wangensteen and J. R. Paine [2] [3] have lately described a series of cases of obstruction, in which the duodenal tube was used to drain both stomach and small intestine by a process of continuous suction and siphonage. The tube they use is a smooth catheter-tipped duodenal tube which is passed into the stomach through the nose. They emphasise their opinion that siphonage alone is not enough and that it must be combined with suction if continuous drainage is to be effected. The reasons for this are that siphonage will stop as soon as any appreciable amount of air enters the duodenal tube, and that distension of the small intestine cannot be overcome unless the gas is removed as well as the fluid, which is impossible by siphonage alone. The apparatus used by Wangensteen and Paine to produce suction is very simple. A large bottle is slung above the head of the patient's bed in an inverted position. The bottle is almost filled with water, and through its neck passes a long straight glass tube, whose upper end passes above the level of the fluid in the bottle, while the lower end is directly connected to the duodenal tube. A short glass tube passes through another opening in the cork of the bottle and is connected to a long rubber tube, whose lower end lies below the surface of water in another large bottle standing on the floor beside the bed. Suction on the duodenal tube is effected by passage of water from the upper to the lower bottle. The tip of the nasal tube in many cases passes through the pylorus; it is therefore advisable to make several openings in the tube for nine to ten inches back from the tip, thereby allowing for simultaneous drainage of stomach and intestinal contents. The amount of negative pressure varies directly with the difference between the vertical level of the tip of the tube in the stomach (or duodenum) and the surface of the fluid in the lower bottle. A difference of two feet six inches has been found convenient.

Continuous suction of this kind has been employed with no little success in cases of simple (non-strangulated) obstruction, either as a preliminary to surgical relief or, in cases of paralytic or spastic ileus, without subsequent recourse to operation. The most notable success has been in cases of post-operative (immediate or remote) obstruction due to adhesions. The main contra-indications to a period of preliminary suction, and therefore of delay in operating, are suspicion of strangulation of the bowel and the presence of obstruction of the descending colon. Where there is strangulation—as in obstruction by hernia, volvulus, and intussusception—the blood-supply to the bowel is compromised and delay may be fatal. In obstruction of the descending colon the small intestine is seldom distended, and its drainage is therefore useless.

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[1] Brit. Med. Jour., 1932, ii., 540.
[2] Surg., Gyn., and Obst., November, 1933, p. 601.
[3] Jour. Amer. Med. Assoc., Nov. 11th, p. 1532.

ANNOTATIONS

GENERAL MEDICAL COUNCIL: THE EXCLUSION OF MEMBERS OF DEFENCE SOCIETIES

At the meeting of the General Medical Council on Friday, Dec. 1st, during the consideration of the case of a practitioner charged with canvassing, seven of the 37 members of the Council present withdrew and took no part in the proceedings. The complainants in the case were the Medical Defence Union, and the practitioner against whom the complaint was made was a member of the London and Counties Medical Protection Society; three of the retiring members of the G.M.C. belonged to the Union, the other four to the Society. The case, which was an important and difficult one, led to the expression of an opinion by the G.M.C. that the practitioner's methods were contrary to public interest and discreditable to his profession of medicine, judgment being postponed for a twelvemonth. The effect of the withdrawal was that during the whole of the hearing of this case there was present no representative of either of the English Royal Colleges or of the University of Cambridge; the president of the B.M.A. was excluded, and one of the direct representatives for England. During the hearing of another case on the following day, when a practitioner was charged with taking a commission, three members of the G.M.C. who belonged to the Medical Defence Union withdrew and took no part in the proceedings, as the practitioner was a member of the Union and was accompanied by its solicitor. If this sort of thing is to continue, can it be held that the General Medical Council in its disciplinary capacity is representing all sections of the medical profession and all shades of professional thought? The exclusion of so many members of the Council—and, in the nature of things, some of those most closely associated with the rough and tumble of medical practice—might indeed be unfair to someone charged before the Council with an offence; surely a practitioner in distress has an implied right to the potential attendance of these very members. Would it not be better for the Council to require that none of its members should have entangling alliances which prevent them from taking part in its proceedings? If it would be a hardship for any of them to surrender their membership of the protection societies, they might be allowed to remain in benefit on the understanding that during their period of membership of the G.M.C. they should take no part in the affairs of the society.

RESEARCH ON ASTHMA

Six years ago the Asthma Research Council arose in answer to the challenge that there was no known cure for asthma, but the work of the Council has been shaped not directly to the discovery of a cure but to find any link in the long and intricate chain of evidence as to what are the causes of asthma. The advisory committee of which Dr. A. F. Hurst is chairman, and Prof. R. J. S. McDowall vice-chairman, includes clinicians actively interested in this evidence in London, Edinburgh, Glasgow, Belfast, and several large provincial centres. The report for the year 1932 which has just been issued shows how wide the net has been spread, investigations having been carried out at a number of centres. In an appendix it may be seen how much of this work has been published in our own columns. At the

Guy's clinic further work has been carried on to determine any differences there may be between the make-up of the asthmatic and the healthy individual. There seems to be no important difference between the blood pressures of asthmatics and normal people, but asthmatics have a diminished resistance to infection although there is an antagonism between asthma and tuberculosis. Work is also proceeding on the significance and mechanism of the eosinophilia of asthma and into specific sensitisation, especially the action of Oriel's proteose. In the massage department the treatment of asthma by respiratory exercises is being pursued. At the Ormond-street clinic more than 350 new cases of asthma were investigated during the year, allergic conditions being treated on a large scale. Neither ephedrine nor pseudo-ephedrine is found entirely to prevent asthmatic attacks. In the hay-fever clinic results have been most encouraging with a concentrated solution of the mixed grasses to which the patients reacted. A special milk in the treatment of infantile eczema has been worked out and is now marketed. The St. Mary's clinic is still growing. No patient, it is said, who receives treatment for hay-fever fails to be cured, and desensitisation with massive doses of pollen extract seems to hold out a hope of permanent cure. In following up serum reactions it was found that bovine serum produces no sensitisation, an observation which may have practical outcome. The state of mind of the patient has been shown to affect the size and intensity of the dermal reaction very noticeably. At the King's College and University College clinics an extreme variability has been found in the potassium of the blood, and it was discovered that the injection of adrenaline brings about a rise of blood potassium by over 50 per cent. Work has been done on the osmotic pressure of perfusion fluids when tested on bronchial reactions. At the Leeds clinic 86 per cent. of the wool-sensitive cases were shown to have acquired sensitivity as a result of their occupation; after desensitisation most of them showed an increased tolerance and were able to return to their work. Good results have been obtained from intramuscular injection of a liver extract. The Council relies on voluntary aid for its financial support, something over £1800 having been received in answer to the wireless appeal of January last. It also receives an annual grant of £600 from the Halley Stewart trust, and this year a bequest of £50 was made by an asthma victim. The head office of the Council is at King's College, Strand, London, W.C.2.

VITAMIN D AND THE HEALING OF FRACTURES

A SERIES of animal experiments has been carried out by J. Morelle[1] at the University of Louvain to determine the effect of vitamin D, in the form of irradiated ergosterol, on callus-formation after fractures. Most of the observations were on fractures of the hind leg of the rat; in some cases both bones had been fractured, in others the fibula alone. Quite different results were obtained from administration of small and large doses of vitamin D in fractures of the fibula. To get any effect at all, it was found necessary to give more than 10 units a day; below that dosage callus-formation was not influenced. Therapeutic doses of 50 to 100 units a day, however, markedly accelerated the formation of callus—an effect not so well marked when a dosage of 1000 units a day was reached. With massive doses of ergosterol (7500 to 10,000 units), on the other hand, there was a retardation in the first appearance of th callus, and a slowing-down of the process of healin still evident two months after the fracture. Youn animals were more resistant to the unfavourabl effects of over-dosage than were the adults. Morell thinks that the vitamin D works, not by influencin the general condition of the animal, but by specifi action on the lesion in stimulating the proliferatio of fibroblastic tissue. This falls into line with th observations of Grauer (whom he quotes), who foun that large doses of this vitamin might give rise to th appearance of the lesions of osteitis fibrosa.

An apparent anomaly was discovered in the effec of very large doses of vitamin D in rats with a fractur of both bones of the hind leg. In these animals ther was a rapid and exuberant production of callus This is not an isolated observation, for it agree with the experiments of J. A. Collazo and others Morelle holds that this excess callus is a sign o vitamin-D intoxication. In these experimenta animals the conditions where both bones of the le are broken are quite different from those in fracture of the fibula alone, for in the former there is n possible method of satisfactory fixation. The resul of this mobility, according to Morelle, is the productio of an abundance of cartilaginous tissue at the site o the fracture, and it is precisely on this tissue tha vitamin D is said to act with most effect. Clinica observations on the possibility of influencing the rat of consolidation of fractures by vitamin therapy hav given conflicting results, so that considerable importance attaches to direct histological observations suc as Morelle has carried out.

OCULAR CONDITIONS IN DIABETES

THE connexion between certain affections of the eye and diabetes is a subject on which further light is thrown in an article by Mr. W. A. Gray published in the *British Journal of Ophthalmology* of October, 1933. The total number of diabetic patients examined by him was 583. The number of cases of retinal arterio-sclerosis in the series points to the probability that diabetes expedites degenerative changes in the vascular system. It is certainly not the sole factor in causation, since degenerative changes appear to be absent in the young. Even slight evidence of vessel change in the retina is important, however, because they indicate that more pronounced changes may exist elsewhere. Diabetic retinitis is a well-known phenomenon, the signs being retinal exudates and hæmorrhages, either in combination or alone. Out of 500 diabetics these signs were observed in 66 cases. They are sometimes, but not always, associated with high blood pressure and albuminuria, but not specially with arterio-sclerosis. A characteristic form begins with whitish-yellow spots in the central part of the retina.

A reduction in intra-ocular tension occurs in a large percentage of cases of diabetic coma. The effect of an overdose of insulin is to produce a condition which resembles coma, and it is not always easy without a history to distinguish between the two states. The soft eye might therefore be an important point in diagnosis, but there is no convincing evidence on this point. Vitreous hæmorrhage is especially prone to take place in diabetics with arterio-sclerosis. In seven cases observed the vitreous hæmorrhage had occurred while the patient's diabetes was fully controlled by treatment. These cases have been found to be constantly associated with an infective focus somewhere in the body.

In most of the diabetic patients who develop cataract it is indistinguishable from ordinary senile cataract. Rarely, however, a peculiar form consisting of small subcapsular opacities may be observed. This true diabetic cataract occurs in young patients with severe diabetes; in this series only two such cases were seen. The average age of those developing ordinary senile cataract appears to have been lower than is the rule in non-diabetic cases; moreover, a history of septic infection was not uncommon. Ocular palsies are known to be liable to occur in diabetics; according to Mr. Gray no muscle supplied by the third, fourth, or sixth nerve is exempt, while the sixth nerve seems to be especially vulnerable. No mention is made of changes in the refraction of the ocular media which have been observed in diabetes and which are usually of a temporary nature. Otherwise his review is very complete. It is satisfactory to be assured once again of the value of insulin medication for diabetics undergoing ophthalmic operations. The prognosis of cataract needlings and extractions in diabetics is said to be as favourable as in healthy members of the community.

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[1] Rev. Belge des Sci. Méd., 1933, i., 481.

INOCULATION AGAINST WHOOPING-COUGH

THE results of the vaccine prophylaxis of whooping-cough are far from being consistently favourable and it is generally agreed that to use old stock vaccines is, in any case, to court failure. L. W. Sauer[1] insists that the vaccine must be made from recently isolated strongly hæmolytic strains of the Bordet-Gengou bacillus grown on Bordet medium prepared with fresh defibrinated human blood. The dosage, he says, must be very much larger than that commonly employed, and further an interval of several months must be allowed to elapse between injection and exposure in order that immunity may develop. Sauer, like T. Madsen,[2] recommends a vaccine containing 10,000 million bacilli per cubic centimetre, but whereas Madsen injects doses of 0·5, 0·7, and 1 c.cm. intramuscularly or subcutaneously at intervals of three or four days, Sauer injects a first dose of 1·0 c.cm. into each deltoid; this is followed a week later by a dose of 1·5 c.cm. into each biceps and a week later still by a similar dose into each triceps. The total volume of vaccine injected is thus from 7 to 8 c.cm. Reactions, which are due entirely to dead bacilli and endotoxin and which may be local or systemic (transient pyrexia), are not troublesome at any age and in infants "surprisingly mild." Small nodules may persist for a few weeks at the site of each injection. During the years 1928–32 inclusive, 394 susceptible children, whose average age was eighteen months, were injected some months before exposure. Susceptible older children in most of the families served as controls. In the course of five years 31 control children in 24 of the families contracted typical whooping-cough and 29 of the injected children were intimately exposed throughout the attack, playing and sleeping with the patients. No injected child contracted the disease. In two families of three children each, an infant contracted the disease from a control but the third child in each family, injected three years previously, escaped. In one family, twin controls contracted whooping-cough simultaneously during a school epidemic but their younger sister, injected four years previously, escaped. Each of 12 control children with typical attacks failed to infect an injected child in their families in spite of the closest contact throughout the whole period of the disease. In a series of 394 injected children were 162 who were accidentally exposed to infection but none developed a cough "which in any way resembled pertussis." Madsen records the results of inoculation with fresh vaccines, a total of 22,000 million bacilli being injected, "shortly before" an epidemic of pertussis in the Faröe Islands in 1929. Amongst 1832 inoculated persons 458 escaped attack, whereas amongst 446 uninoculated inhabitants all except eight contracted the disease. Sauer considers that as the disease is relatively benign, except for the first two years of life, and as four months should elapse for immunisation to occur, injections should be started, preferably, between the ages of six and twelve months. Madsen has abandoned the inoculation of infants under one month of age since the occurrence of two fatalities in the new-born. It is clearly desirable that observations on a larger scale should be made with a view to confirming the important results obtained by Sauer from the use of fresh vaccines in very large doses, a long interval being allowed for between injection and exposure as he advises.

A FATAL DISEASE OF SALMON AND TROUT

NEARLY forty years ago the cause of high mortality among trout and salmon in certain European rivers was identified[1] as a proteus-like organism, which gave rise to an intense septicæmia associated with necrotic areas in the muscles and subcutaneous tissues. The disease was investigated in 1902 by M. C. Marsh in America, but remained little recognised outside fish-farms until 1909, when widespread epizoötics began to occur in the summer months, the disease being first reported in this country in 1911. In 1925 several English trout rivers were infected, and salmon dead of the disease were found in two Scottish rivers; since then it has spread widely in England, Scotland, and Wales. Recurrence in the same rivers in successive years has been very irregular, since outbreaks are due to several independently varying conditions. Salmon and the different species of trout are chiefly affected, but grayling, carp, gobies, and a few other fish have occasionally acquired the disease naturally; gold-fish and also frogs are susceptible to infection by inoculation. In 1929 a committee was appointed by the Minister of Agriculture, under the chairmanship of Prof. T. J. Mackie, M.D., to make investigation and to report on the disease and methods of combating it. This committee has now issued its second report.[2]

The most obvious sign of the disease is the formation of one or more "furuncles" in the muscle or subcutaneous tissue—hence the name furunculosis. The lesions do not contain pus cells, but consist of necrosed and disintegrated tissues swarming with the causal micro-organism. These collections may discharge through openings in the skin or may track into the deeper parts. The *Bacillus salmonicida* is a Gram-negative, non-motile, non-sporing organism which grows readily on agar at 10°–20° C. but not at 37° C., producing a characteristic brown pigment. It is usually found in very large numbers in the kidneys and blood, as well as in the local foci. Furunculosis spreads readily amongst trout in an infected tank, and an outbreak may be set up by contaminating the water with a culture of the specific bacterium or by introducing fish which are infected either naturally or by inoculation. Under these conditions besides the fish which die of the disease other trout become carriers, though apparently unaffected, and the organism can be isolated from the kidneys. These carriers may remain healthy for many weeks, but probably all eventually succumb with septicæmia,

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[1] Jour. Amer. Med. Assoc., Nov. 1st, 1933, p. 1449.
[2] Ibid., July 15th, p. 187.

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[1] Emmerich, R., and Weibel, C.: Arch. f. Hyg., 1894, xxi., 1.
[2] Second Interim Report (June, 1933) of the Furunculosis Committee. H.M. Stat. Office. Pp. 81. 2*s.* 6*d*.

especially if the water becomes warm or other conditions are unfavourable. A temperature of 55°–60° F. in natural waters has been shown to coincide with an epizoötic of furunculosis. In a tank containing infected water a rise of temperature to 60° F. rapidly induced deaths from the disease, but at 70° F. the spread of disease was less active. Sewage or other pollution may occasionally predispose to infection, but epizoötics are rarely associated with pollution, and often occur in very pure waters. Experimentally, deficiency of oxygen, though soon causing a high mortality, does not appear to conduce to furunculosis. The occurrence of natural epizoötics is very irregular in different seasons, but in the case of salmon, if there has been sufficient rainfall to allow the fish to ascend the river, low water and crowding of fish below falls and a high temperature appear to be the chief determining factors, provided a source of infection is present.

The infection is probably perpetuated from one season to another by trout which are carriers. Salmon are especially liable to be attacked soon after entering a river, and this has given rise to the idea that they bring the infection with them from the sea. The supposition is unlikely because the organism does not survive in salt water. The suggestion that young fish are infected in one river, become carriers and retain the infection in the sea, and then in the following season take the disease into a new river is not borne out by the negative results obtained from the examination of a large number of smolts caught on their way down to the sea. Sea trout and grilse taken from salt water and placed in infected fresh water die rapidly of furunculosis; the recurrence of furunculosis in certain rivers but not in others nearby points to the infection starting from a local focus in the fresh water. The spread from one river to another is probably chiefly due to the introduction of infected (but apparently healthy) fish from infected fish-farms at home or abroad. It has been shown that the ova are not infected internally and can be disinfected; even eggs which have been heavily contaminated artificially on the outside can be freed from infection by immersion in a 1 in 2000 solution of acriflavine without impairing their vitality. It is curious that fry and young trout under a year old are very resistant to infection and do not readily become carriers. Besides infected fish no other source of *B. salmonicida* has been discovered.

As a result of its exhaustive inquiry the committee has recommended the prohibition, for stocking waters in this country, of the importation of live fish from abroad liable to infection, and has urged that our own fish-farms should be inspected and controlled. The Minister of Agriculture stated on Monday in the House of Commons that it was hoped to introduce this session a Bill to deal with the recommendations of the report.

BIRMINGHAM CONFERENCE ON MENTAL RESEARCH

ON Nov. 27th a conference was held at Hollymoor, Northfield, under the auspices of the Birmingham Joint Board of Research for Mental Disease, with the object of stimulating research into the origins of mental disorder and of inviting coöperation amongst the mental hospitals in the Midland Counties. Dr. F. A. Pickworth, director of the board, pointed out in an address that of the total sum expended on treating mental disorder in England and Wales not a halfpenny in the pound was spent on fundamental research into its primary causes. He contrasted this parsimony unfavourably with the expenditure on cancer research, expressing a doubt whether the suffering from mental disease might not even surpass that caused by cancer. One of the reasons for meagre public support was, he thought, the exaggeration of the hereditary factor in mental disorder which resulted in an attitude of hopelessness. He defined some of the limitations imposed on the research worker in mental disorder, the chief of which was the lack of correlation with general medicine. Sir Gilbert Barling, who presided, said he had always held that research into mental disorder should be greatly extended, and he felt the need of some central institution where this work might be coördinated. At his suggestion it was decided to appoint a small committee to inquire into the possibility of forming liaison between the medical men concerned with mental work, as a preliminary step towards the setting up of such a centre. The conference was attended by 26 superintendents or assistants of various mental hospitals in the Midlands, and there were also present Sir Hubert Bond, representing the Board of Control; Dr. Stanley Barnes, dean of the medical faculty; and Dr. H. P. Newsholme, medical officer of health. Exhibits were shown from 15 of the mental hospitals, and the board had organised a remarkable collection of pathological exhibits.

RESISTANCE TO COLDS

QUITE a number of voluntary "censuses" have been made in recent years, especially in America, of the attacks of upper respiratory disease suffered by various groups of persons over a period of one or more years. They agree in showing that with people of the same social class, and living, as far as can be determined, under uniform conditions of exposure to the risk of attack, there is a good deal of variation in the number of "colds" actually acquired during any period of observation. Among college students, for instance, it has been found that quite a high proportion will suffer as many as four or more attacks in an academic year, while an equally high proportion will succumb only once or escape entirely. This, at first sight, merely suggests a confirmation of the common observation that there are wide differences in individual immunity to colds, whether inherent or acquired. But in fact it is not safe to accept "common observation" in such a case at its face value. In the first place we have no adequate measure of the exposure to risk—whether it is really equal between the susceptible and the apparently immune—and secondly the period of observation is often too short for it to be determined whether the not-attacked are indeed immune, and escape attack permanently, or whether they have escaped for a relatively short period of time merely by the operation of the laws of chance.

William M. Gafafer and James A. Doull,[1] working with a grant from the John J. Abel fund for research on the common cold, have tried to solve this problem. As material they take first the distribution of the number of attacks of upper respiratory disease suffered by 366 Wellesley College freshmen in the winter of 1919–20, and by 343 medical students in the Johns Hopkins University in 1929–30. Amongst these there were reported 849 and 901 attacks respectively. The distributions of these attacks—that is, the number of students suffering during the period of observation from 0, 1, 2, 3, &c., colds—are found to be fitted reasonably closely by simple binomials. In other words, it is not improbable that in these two experiences the colds were distributed merely by chance, and therefore, apparently, differences in degrees of immunity did *not* exist amongst the students.

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[1] Amer. Jour. Hyg., November, 1933, p. 712.

A somewhat simpler process of analysis is applied to other records collected under the Abel fund, which provide sufficient data for it to be seen whether "cold-resistants" and "cold-susceptibles" remain in those categories for any length of time. The method here adopted was to correlate the number of attacks suffered by the individual in different years, for if stability of resistance really exists the susceptibles should always show a relatively high attack-rate, and the resistants a relatively low attack-rate. Although the degree of relationship is somewhat less than might be expected there is certainly a tendency for persons to remain in the same class at least for successive years. To this extent the observations contradict the previous ones. But with an increasing interval the relationship becomes less distinct, and for a group of students observed in 1928–29 and again in 1931–32 there is scarcely any indication of individuals remaining in the same class. Further available data comprise the results of continuous observation for three academic years of 111 students and for four academic years of 45. From these figures can be computed the average number of colds suffered in subsequent years by students who were attacked varying numbers of times during the first year. The process can, of course, be reversed, and for individuals suffering some selected number of attacks in the last year of observation the previous history can be analysed. The interesting fact emerges that, in general, the trend of "the average number of colds reported by those suffering few or many colds when projected into the future or back into the past is towards the average or mean number reported by the entire population." In other words, this population, observed for a reasonable length of time, shows no stability of resistance or susceptibility to colds. This result is so far opposed to general belief that the authors' data and analysis deserve careful attention and further work for the confirmation of their conclusions.

THE HISTORY OF OPHTHALMOLOGY

A FEW months ago Dr. R. R. James published in book form[1] a series of studies in the history of ophthalmology in England prior to 1800 which had previously appeared in the *British Journal of Ophthalmology*. Now Dr. Alfred Bader, of Basle, has supplied a welcome complementary volume which deals with the development of the knowledge of diseases of the eye, especially in Switzerland, during the eighteenth and nineteenth centuries.[2] He points out that at the beginning of the eighteenth century knowledge of the eye was still very scant. Cataract, or "graue star," was not thought to be connected in any way with the crystalline lens, but was imagined to be a sort of curtain formed behind the pupil by the falling down of deposits formed in the fluid of the eye (hence the term "Cataracta"). The functions of the retina were unknown; therapy consisted largely of superstitious rites, and though the operation of couching for cataract was performed, it was justly considered so uncertain in its results that the orthodox surgeons preferred to leave it to itinerant quacks who performed in public with all the paraphernalia of the showman, sometimes obtaining sensational "cures" as the immediate result of a successful depression of the lens; in which event, it is said, the operator would demand a heavy fee from the astonished victim. If it was refused, he would seize his head and, while bending it forwards, give it such a good shake as to cause the displaced lens to fall forward into the anterior chamber, and so punish him by making him blind again.

The process of replacing this mixture of superstition and charlatanry by scientific knowledge and skilled practice was a long one. Michel Brisseau, a French military surgeon, was the first to discover the real nature of cataract in 1705 by the simple process of making a post-mortem examination. His assertion that it was possible to see in the absence of the crystalline lens was condemned by the Paris Royal Academy of Science as a "physiological absurdity." It was Heister, of Leyden, who in 1719 first claimed the operation for cataract as properly included in the province of surgery; Cheselden, of St. Thomas's Hospital, devised the operation of iridotomy in 1728, and in 1745 a Frenchman, Jacques Daviel, performed the first intentional extraction of the cataractous lens by means of a corneal incision. He seems to have been an admirable surgeon, and in contrast to the custom of his time did all he could to make his methods known to his professional colleagues. The same could not be said of an unqualified pupil of his, Michael von Wenzel, who was summoned to Vienna and is said to have purposely misled his Austrian colleagues; after his departure their attempts at extraction failed so that he himself had to be recalled. To this incident is ascribed the foundation of the Vienna school of ophthalmology. The court founded a professorial chair in 1773 with Barth as its first occupant, and from that date Vienna has remained a world-famous ophthalmological centre. During the first half of the nineteenth century the work of Thomas Young, the Englishman, on the physiology of vision was important. In Paris, after a period of stagnation during the Napoleonic era, a revival of ophthalmology was due to Sichel, who founded a private eye clinic, and his pupil Desmarres (1810–1882). They had to combat the opposition of the professors of surgery who strove to prevent ophthalmology from becoming a specialty and so obstructed progress. In Vienna the chair of ophthalmology was officially separated from that of surgery as early as 1812, and in 1818 the study of ophthalmology was made compulsory for medical students. One of the best known professors was Joseph Beer, whose text-book was for long the standard work on the subject.

The most epoch-making advances in the theory and practice of ophthalmology date from the middle of the nineteenth century, being associated with the names of Helmholtz (Königsberg), Donders (Utrecht), Albrecht v. Graefe (Berlin), Bowman (London), and Arlt (Vienna). The ophthalmoscope of Helmholtz opened up a new world to be conquered. Donders's was the first scientific treatise on refraction and accommodation; von Graefe in his comparatively short life (1828–1870) achieved a well-merited reputation. He introduced iridectomy for glaucoma, improved the operation for cataract by his modified linear method performed with his well-known knife, founded the *Archiv für Ophthalmologie*, which is still one of the chief ophthalmic periodicals, and did much to promote a spirit of comradeship with his colleagues, especially through the annual meetings of the Heidelberg Ophthalmologische Gesellschaft, constituted in 1863. It was to von Graefe more than to any other individual that the movement to make ophthalmology a specialty apart from general surgery gained a firm footing in Germany. Several of his pupils were appointed to new chairs in various Prussian universities. Vienna had been the pioneer in this movement half a century earlier. In France the same tendency appeared later, and in England later still. The advances in the technique of cataract extraction are illustrated in a table giving the percentage of failures of well-known operators at different epochs. Daviel's failures were 10 or 11 per cent.; Friedreich v. Jäger, a century later, who was the first to use the upper corneal incision instead of the lower one, failed in 4·5 per cent. of his cases; Albrecht v. Graefe with his modified linear incision (1866) reduced the figures to 2·8 per cent. Subsequently, with first antiseptic and finally aseptic methods, the failures have been brought down by good operators to under 0·5 per cent.

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[1] See THE LANCET, 1933, i, 1356.

[2] Entwicklun[illegible] Jahrhundert mit besonderer [illegible] ass von Prof. Horner, Zürich [illegible] zt in Basel. Basel: Benno Schwabe and Co. 1933. Pp. 231. 10 Swiss francs.

Dr. Bader dedicates his work to the memory of the Swiss ophthalmologist, Friedrich Horner, who was the predecessor of Prof. Haab at Zürich. Its second half consists of reprints of an interesting series of letters to Horner from some of the foremost ophthalmologists of his day, revealing pleasant personal relations between German-speaking colleagues.

THE LATE RESULTS OF PHRENICECTOMY

ON November 14th Prof. E. Rist and Dr. Auerbach told the French Academy of Medicine about the after-history of the first 200 patients treated by phrenicectomy in Prof. Rist's hospital between October, 1923, and June, 1931. Twenty of them could not be traced, and the fate of the remainder was singularly disappointing. There were, indeed, as many as 100 who, six to eight months after this operation, seemed well on the way to recovery, but from two and a half to ten years later only 26 recoveries could be claimed, apart from the 16 cases in which some improvement had been maintained. Thus in only 21 per cent. did the test of years credit this operation with some degree of success. On the other hand, as many as 86 were found to have died, and 36 had had to undergo an extrapleural thoracoplastic operation because of relapses. Among the 100 who at first responded satisfactorily to the operation were 25 of the 26 included among the ultimate recoveries, and all the 16 who maintained some degree of improvement. Of these 100, 79 had supplemented the operation by living under sanatorium or *quasi*-sanatorium conditions, with continuous medical supervision, for six months to two and a half years. This group contained all but four of the 42 patients who derived permanent benefit from the operation. Among the 21 patients who profited early from the operation but who did not supplement it by sanatorium treatment only two were found to be cured, and one improved on re-examination. Among the 80 patients who did not derive even transitory benefit from the operation, there was only one who ultimately recovered, and this patient had undergone sanatorium treatment. The lesson of these observations is obvious. Unless the early benefits of phrenicectomy can be supplemented by the systematic rest and continuous medical supervision of the sanatorium, they are not likely to be maintained. The artificial pneumothorax gives better ultimate results because it entails periodic injections which in their turn imply medical control. The chief advantage claimed for phrenicectomy over an artificial pneumothorax is the freedom the former confers on the patient who has no irksome secondary operations—*i.e.*, refills—to anticipate. But probably it is just this unpleasant discipline and all it implies which often saves the patient's life.

POLIOMYELITIS VIRUS AND NORMAL SERUM

THE occurrence of acute anterior poliomyelitis in epidemic form in Melbourne during three successive years 1929–31 suggested that the pooled serum of the normal inhabitants might have a considerable antiviral activity. R. Southby and Margot McKie[1] undertook a series of experiments on macacus monkeys to investigate the neutralising effect of the serum of apparently normal adults when mixed with virus in vitro. The serum of 32 normal donors living in Melbourne was pooled and compared with the antipoliomyelitis human serum prepared from convalescents by Jean Macnamara and F. G. Morgan.[2] It was found that a virus obtained locally from a child that had died of the disease was highly virulent for a monkey, and this strain was used after passage through monkeys for these experiments. The tests which they made showed that whereas rather more than 0·6 c.cm. of "normal" serum was needed to neutralise 0·5 c.cm. of virus emulsion when mixed with it in vitro, 0·3 c.cm. of the convalescent serum had the same effect, though the results were not quite regular. In further experiments made to compare the local virus with a strain from the Rockefeller Institute in New York, it was found that an attack of poliomyelitis in a macacus following inoculation with the local virus would protect the monkey against the American virus, if this were inoculated after recovery from the illness. It was concluded that the difference in immunising effect of strains from Melbourne and New York respectively which had been found by Macnamara and F. M. Burnet[3] was probably due to unequal virulence rather than to antigenic diversity. The experiments also showed that the degree of immunity following an attack in an inoculated monkey was very unequal in different individual animals.

DR. J. Alison Glover, F.R.C.P., has been appointed senior medical officer to the Board of Education in succession to Dr. Ralph H. Crowley. He takes up his duties there in February.

DR. Paul Richer, who died in Paris on Monday last at the age of 84 years, was distinguished equally as pathologist and sculptor. A pupil of Charcot and then his collaborator at the Salpêtrière, Richer was for many years laboratory chief of the clinic for nervous diseases. He held the chair of anatomy at the National School of Fine Arts, designed the monument to Pasteur at Chartres and many of the medals struck in commemoration of medical events. He was a member of the Académie de médecine and the Académie des beaux-arts.

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[1] Med. Jour. Australia, 1933, ii., 404.
[2] THE LANCET, 1932, i., 469, 527.
[3] Brit. Jour. Exper. Path., 1931, xii., 57.

CARNEGIE AWARD TO A MEDICAL MAN.—The Carnegie Hero Fund trustees have made an award to Dr. Hugh Robert Kendal, of Westerhope, Newcastle-on-Tyne, in recognition of his action in the rescue of a boy trapped in a coal mine. The boy's fingers were caught in a collapse of stone and had to be freed by amputation. The operation took 45 minutes, during which time Dr. Kendal had to lie on his back in a space 19 in. high and 2 ft. wide—a further collapse of about 100 tons of stone being possible at any moment. Dr. Kendal is the son of Dr. C. R. Kendal, of Hexham.

THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

IX.—THE RÔLE OF VITAMINS AND INORGANIC SALTS

APART from the proteins, fats, and carbohydrates and, of course, water—which constitute "food" and "drink" to the man in the street, normal growth and health depend upon adequate supplies of a number of organic and inorganic substances, and it is about these that I wish to speak to-day. I've "got a little list" here which differs from Koko's more famous one, for its constituents would all of them be missed :

ORGANIC ESSENTIALS	INORGANIC ESSENTIALS
Vitamin A (or carotene).	Sodium.
" B1.	Potassium.
" B2.	Calcium.
" B3.	Magnesium.
" B4.	Iron.
" B5.	Copper.
" C (ascorbic acid).	Manganese.
" D (calciferol).	Chlorine.
" E.	Iodine.
	Phosphorus.

Now of the B-vitamins 3, 4, and 5 are very interesting scientifically, but so far they have not been shown to have any clinical application ; 4 is necessary for the well-being of rats, and 3 and 5 for the well-being of pigeons, but as few are interested in breeding rats, and as most of you gave up keeping pigeons when you went to your first boarding-school, these three may be crossed off our rather formidable list.

The Inorganic Essentials

Turning to the inorganic essentials *potassium* is the predominating base of all cellular tissues, whether animal or vegetable. There is no fear of any deficiency, and as an excess is easily removed through the kidneys, dietetically potassium presents no problems. *Magnesium* also is an element which is essential to life. A deficiency of magnesium has been shown recently in America to lead to a very definite syndrome in animals. Miss E. Watchorn and I have been interested in this subject for some time. We have found that a chronic shortage of magnesium in young rats may lead to bony changes; post mortem the ribs are bent and the costochondral junctions enlarged. The long bones appear to be brittle. Oddly enough, however, even when animals are dying of a magnesium deficiency their muscles and internal organs may contain almost if not quite as much magnesium as the controls. There is little likelihood, however, of any of you running short of magnesium, and a moderate excess does no harm, being got rid of partly by the fæces and partly by the urine, so we need not consider it further.

Manganese is an element which appears to be essential for the normal reproduction of experimental animals. Man undoubtedly needs some too, but most foods contain traces, and it has not yet been seriously suggested that lack of manganese plays any great part in human sterility, or that any of us are in danger of a shortage or surfeit of this element. We may here dismiss *vitamin E* with equal dispatch. Without this vitamin rats conceive normally but fail to form a placenta and abort, but it is widespread in Nature, and has not yet been generally accepted as having clinical application.

SODIUM

If I had been giving this lecture 2000 years ago I would probably have devoted most of it to a discussion of common salt. We are apt to forget nowadays what tremendous importance these two common elements, *sodium* and *chlorine*, have played in the field of preventive medicine. They have always been considered together, and will be so considered here to some extent for the sake of convenience, but I cannot emphasise too strongly that it is quite wrong to think of the sodium in the body as sodium chloride. Muscle tissue does not contain enough chlorine to hold all its sodium, and some of the sodium in the blood-serum is, as you know, combined with bicarbonate as alkaline reserve. I need only mention the excess of sodium bicarbonate in the pancreatic juice, and of hydrochloric acid in the gastric juice to remind you that the function of sodium and chlorine must be considered separately. Given sodium chloride, however, the body finds no difficulty in separating the two elements, keeping the sodium as bicarbonate, or in any form required, and excreting the chlorine as ammonium chloride in the urine.

Although the body as a whole contains far more potassium than sodium, blood-serum and all intercellular fluids contain about 300 mg. of sodium per 100 c.cm.—i.e., 15 times as much sodium as potassium by weight. Milk contains enough sodium for the growing animal, and on flesh food generally man could live without added salt. Now plants tend to contain very much less sodium than animals, and relatively more potassium. They may contain the merest traces of chlorine. With the introduction of agriculture millions of years ago, the change in the dietetic habits of the people brought trouble in its train. Our forefathers began to suffer from a shortage of salt, and developed a craving for it. Salt became a necessity of life.

Ancient literature is full of references to the importance of a salt supply and indeed people regarded a salt spring as a gift from the gods. According to Aristotle the Chaonims of Epirus had a salt spring which ran into a stream in which there were no fish and the legend had it that the gods had allowed them to have salt instead of fish. At some very early time salt acquired a religious significance which is easy to understand. The gods who gave the kindly fruits of the earth were worshipped as the givers of "bread and salt." Possibly some of you remember the verse in Leviticus II., 13—"And every oblation of thy meat offering shalt thou season with salt, neither shall thou suffer the salt of the covenant of thy God to be lacking from thy meat offering : with all thine offerings thou shalt offer salt." As the rest of this chapter shows clearly, meat here does not, of course, mean flesh but cereals.

In the twentieth century people here are apt to forget the value of salt. Its popularity as a votive offering has certainly declined. Mrs. Jones, for example, does not feel compelled to send a packet of Saxa to the harvest festival to go with the vegetable marrow. Our cooks see to it that we have an abundance, and there is no danger of an excess. It is quite otherwise, however, with the domestic animals. In Kenya and other places far from the sea, salt is a most important addition to the cattle feeds and is, I understand, an important ingredient of some of the poultry foods. Curiously enough in modern medicine salt has fallen from its high estate ; we never add it to anyone's diet. We quite often, in fact, employ salt-free diets for the prevention or cure of œdema, and we do so because water can only accumulate in the body when there is enough salt available to raise its osmotic pressure to physiological limits.

IODINE

We now consider for a moment the problem of that fascinating element, *iodine*. You all of you know how the minute amounts in the food are picked out from the circulation by the thyroid gland and synthesised to thyroxine, which in turn regulates our metabolism. Now iodine was discovered in 1811 by Courtois, and its presence in sponges was detected four years later. It is of interest that burnt sponges were being used for the treatment of goitre before the Athenians built the Acropolis—almost before the dawn of history. It is no new suggestion either that endemic goitre is due to an iodine deficiency. Coindet originated it in 1820, and it was under discussion all the nineteenth century. Since the war, however, it has been extensively investigated in men and animals in Switzerland, New Zealand, and America. It has been shown that in those areas where goitre is endemic the intake of iodine is low, and, further, that the addition of iodine to the water-supplies is a most important therapeutic measure. Unfortunately the story is not quite so simple as this, for all goitres are not cured by iodine, and in England the goitres in some of the endemic areas do not respond well to iodine. In Derbyshire, for example, it seems there must be some other factor, and we have evidence that this is connected with pollution of the water-supplies, and possibly with the amount of calcium and phosphorus in the diet.

How much iodine do we need? I could probably maintain iodine equilibrium on 0·000015 of a gramme per day, but to be on the safe side I should probably have between 0·00003 to 0·00005 g. Children need more, especially at puberty and other periods of rapid growth, and should probably have round about 0·000015 g. per day. These are very small amounts. Let us suppose my daily ration of iodine were magnified to a thing about the size of a pill and weighed one gramme. Then if my other food and drink were magnified in proportion, my pint of beer would fill a large cistern or a small swimming tank 13 ft. 4 in. long, 5 ft. deep and 10 ft. wide, and my total daily intake of food and drink would weigh about 90 tons. There is probably enough iodine in most people's food for their requirements, and there is no justification for interfering with the ordinary person's iodine metabolism. In the endemic areas it may not be so, and even in healthy parts of the country adolescent goitres which respond to iodine are not rare. Treatment should be by minute doses. Natural foods never produce signs of iodism, but large doses of iodine or iodides easily produce pustular rashes and other signs of excess.

IRON AND COPPER

You will remember how economically the body makes use of its *iron* supplies; how it conserves the iron from the disintegrating red blood corpuscles and stores it in the liver and spleen ready to use again. Owing to this process we can live on a low iron intake, and a good diet generally contains plenty of iron for the normal man or woman. The main sources of supply are meat, green vegetables, and the pots and pans. Although anæmia is the first sign of iron deficiency, all anæmias are not, of course, due to this, and of those that are I only propose to discuss that one which lends itself so readily to preventive therapy: I mean the nutritional anæmia of infants.

Milk contains very little iron. Nature has to some extent overcome this lapse on the part of the mammary gland by arranging that the fœtus shall be born with enough iron stored in its body to meet its requirements over the sucking period. There is a tendency for these stores to be used up before the child is put on to food containing much iron and anæmia ensues. Premature infants are particularly liable to this form of anæmia for they are thrown out upon the world before they have had time to make up their stores. Artificially fed babies are also very liable for two reasons: (1) cow's milk contains less iron; (2) cow's milk is generally diluted before being given to children and the supplements added contain no iron.

As you might expect, prophylactic treatment has excellent results, and if iron is added to the feeds there should be no anæmia. Medicated dried milks can be obtained. It is not strikingly beneficial to give the iron to the lactating mothers in the hope that they will pass it on through the natural channels. They will do so only to a limited extent, but this form of therapy should obviously be practised in the interests of mother and child during the months of pregnancy. The best salt to use is ferrous ammonium citrate, and the cost is negligible. This is a very important aspect of prophylactic medication, especially in the tropics where, I believe, it has not yet been tried out on a large scale.

Copper.—Like iron this element is stored by the fœtal liver, and the infant takes a store of copper with it into the world to last it till the milk period is over. We know that the hæmoglobin molecule contains no copper, and we know from animal work that copper is not necessary for the assimilation and storage of iron in the liver, yet in the absence of enough copper the synthesis of hæmoglobin fails and anæmia ensues. Theoretically, then, one should prescribe copper as well as iron for the nutritional anæmia of infants, and possibly for other anæmias, but in practice the medicinal iron salts contain so much copper as impurity that this is unnecessary. At the same time you need not be afraid of copper poisoning, even if you prescribe the massive doses of ferrous ammonium citrate, which are so popular to-day, so that we need not consider copper further.

CALCIUM AND PHOSPHORUS

I now wish to consider the position of calcium and phosphorus, and in connexion with them I shall discuss vitamin D. Muscles and glandular organs only contain small amounts of *calcium* (about 0·01 per cent.), but this small amount plays a very active part in membrane and cellular activity. Bones and teeth contain large amounts of mineral matter, and this is largely calcium phosphate. Tooth enamel, for example, contains over 80 per cent., dentine over 60 per cent., cement about 57 per cent., and bone 50 per cent. An abundant supply of calcium is obviously needed whenever active bone growth is taking place, so that children and pregnant women should have no lack; and since milk also contains relatively large amounts of calcium, lactating women require a high calcium intake. Unfortunately, the supply of calcium in our food tends to be on the low side. This is partly because we do not eat the parts of our food materials that contain most calcium, e.g., the bones, egg shells, &c., and partly because those foods that contain generous supplies of calcium, e.g., milk, sardines, sprats, herrings, and green vegetables, are either not generally popular or are rather expensive. There is, therefore, a real fear that some of the people in this country, for shorter or longer periods of their lives, are not getting enough calcium to maintain their calcium equilibrium.

Phosphorus is perhaps the most interesting inorganic constituent of the body. This may be merely because we know more about its ways at present than we do of the other elements, but even if we find out all bout magnesium, iodine, &c., I think the record of hosphorus will be hard to beat. It is used in the proteins, it is used in the fatty membranes nd in fat metabolism, in the nuclei, in the bones, in the egulation of the body's reaction and as for its part in arbohydrate metabolism—whenever the body wants o do anything to a carbohydrate molecule, even absorb t from the gut, it seems to turn it into a phosphate ester with incredible speed, to do what it wants to the molecule, nd then to de-esterify it again with equal ease. Nothing can live without phosphorus; most living organisms require quite large amounts. It is not surprising, therefore, that somewhere in Nature demand should exceed supply. The annual growth of the ocean plankton, on which ultimately practically all animal life in the sea depends, is limited by the supply of this element, and some pastures contain too little for the herbivorous animals.

Flesh foods of all kinds, however, milk, some vegetables, and wholemeal bread all contain abundant supplies. Our food generally contains enough phosphorus for our needs.

Calcium and phosphorus are both absorbed from the small intestine. Chronic diarrhœa, especially the passage of bulky fatty stools such as we find in sprue and cœliac disease, may interfere with the absorption of calcium by holding the metal in the intestine in the form of insoluble soaps. It is therefore important in these and allied diseases to take steps to guard against hypocalcæmia and its distressing manifestations, such as tetany and laryngismus stridulus. Calcium metabolism and especially bony growth and organisation are at the mercy of several other forces. I need not dwell here upon the influence of the thyroid and parathyroid secretions. The former is not, as a rule, of much clinical importance, and gross abnormalities of the latter are rare, and their treatment hardly belongs to the realm of preventive medicine. We must, however, consider vitamin D.

Organic Essentials

VITAMIN D

Vitamin D is one of the fat soluble vitamins. It was definitely separated from vitamin A by McCollum and others in 1922, following E. Mellanby's work on rickets, and I cannot overstate its importance to preventive medicine in this country. Appropriately enough, therefore, this vitamin was first isolated in crystalline form by a team of workers at the National Institute for Medical Research, at Hampstead, in 1931. It is a sterol allied to ergosterol and formed therefrom by the action of light. 0·00003 g. per day will keep a child in health. This you will remember is about the amount of iodine adults require. In the absence of vitamin D, or calciferol as it has been christened, animals and children develop rickets, and I need scarcely remind you how prevalent this disease has been and still is in this country. In 1868–71 Gee and Ritchie estimated that 33 per cent. of the London and Manchester school-children had rickets. X rays and better diagnosis led Dick, McIntosh, and Newman, between 1920 and 1930, to conclude that 80 per cent. of a series of unselected children in London and Durham had rickets. Flagrant rickets, of course, appears to be rare compared with the large number of subacute and mild forms of the disease. Evidence has been accumulating, especially owing to the work of E. and M. Mellanby, that one of these not obviously rachitic forms of vitamin-D deficiency is "bad teeth." It seems that the proper development of the teeth and jaws is impossible in the absence of calciferol, and for perfect mouths optimum doses are required. Apart from development, vitamin D in optimum doses seems to confer considerable powers of resistance to caries even in formed teeth.

It is certain that the large bulk of our urban population are now living on barely sufficient vitamin D. Except for pregnant and lactating women, adults probably get on all right, but not so the children, and your duty is not done until you have satisfied yourself that every child under your care is getting enough of this vitamin.

The best evidence at present available indicates that children under one year should be completely protected by about 500 international units of vitamin D per day, and children over this age by 1500 units; 10,000 units per day constitutes a dangerous excess and I think it well to emphasise the dangers of overdoing vitamin D. At least one fatal case has been reported in this country and now that highly potent vitamin preparations are obtainable, and vitamin "fans" are becoming increasingly common, I expect to see others. Now how is this happy mean to be achieved? Few foods are rich in vitamin D. Butter fat and other animal fats contain a little, but milk, even breast milk, contains only a very little. The only two foods that contain much vitamin D are egg yolks and oysters, and the latter can hardly be recommended for children under two. On the other hand, we contain plenty of ergosterol in our skin and sunlight or artificial sunlight transforms this to vitamin D, so that if we are getting lots of sun we do not need to depend upon our foods for our vitamin D.

In dealing with a private patient it is well to consider the food and sunlight that the child is getting before prescribing a daily dose of vitamin D. The extra may be given as cod-liver oil or halibut-liver oil, but the concentrated preparations that can be taken in pill form are excellent and may be purchased with the strengths marked in units. Children of the hospital class should always be given extra vitamin D, even if they are being breast-fed. If the child is not at the breast and the parent not very intelligent, the easiest for all concerned would probably be to prescribe some of the milk preparations to which a standardised amount of the vitamin has been added by the makers—but these are expensive. The whole question seems almost to be one for the public health authorities.

VITAMIN C

Vitamin C, or ascorbic acid, as the pure crystalline substance has been christened, is the compound which protects us all from scurvy. Children need it, adults need it, everyone needs it; but fortunately nearly everyone in this country gets it and gets enough of it. The history of scurvy is a fascinating one. It was a scourge in the navy and on voyages of discovery till green vegetables and the juices of the citrus fruits were found both to prevent and cure. I must limit myself, however, to the prevention of scurvy among the civilian population. Practically speaking, this is the prevention of infantile scurvy, which is a well recognised but not very common disease occurring towards the end of the first year of life. Prevention is easy. Orange juice, tomato juice, or some other proved antiscorbutic, should never be omitted from an infant's diet, especially if the child is being artificially fed. Grape juice has little value as an antiscorbutic, and should never be used as such. It should be remembered also that pasteurising destroys about half the vitamin C in the milk.

VITAMINS B_1 AND B_2

Vitamin B_1 is the substance which protects from beri-beri, and beri-beri is a disease of the East caused by eating polished rice. There was no beri-beri till milling by machinery was introduced, but then the people gave up eating the home-ground rice which had always been good enough for their ancestors, and took to the lovely white product of the machine, with most disastrous results. History repeats itself; you will remember what happened to the men of the early Stone Age when they took to agriculture. A change in established dietary custom is always a risky experiment.

Vitamin B_2 is one of the factors which prevents pellagra, a distressing disease of South Italy, the Balkans, and the Southern States of America, characterised by symmetrical rashes, stomatitis, salivation, dyspepsia, and diarrhœa. It is not a disease of this country.

The distribution of the B-vitamins in nature is wide and they are not easily destroyed by cooking. Eggs are a potent source. So is yeast and its extract Marmite, and wholemeal bread. Vegetables, fruit, milk, and animal organs all contain good supplies, and meat less but still appreciable amounts. There is little if any definite proof that a shortage of the B-vitamins ever occurs in this country.

VITAMIN A

Vitamin A is a substance which everyone, especially children, requires for normal growth and health. It is a fat-soluble substance which gives a specific colour reaction with antimony trichloride. It is related to carotene, the pigmented and unsaturated hydrocarbon. As the body can convert carotene into vitamin A, therapeutically the two may be considered together. Liver, butter, cream, spinach, carrots, dried whole milk, and cheese are excellent sources of vitamin A, and a great many other common foods contain appreciable amounts. There is not a great loss during ordinary cooking, so that one would not expect clinical deficiency of vitamin A to be common. Experimentally, young animals deprived of vitamin A ultimately cease to grow and develop night blindness and xerophthalmia, which is a non-specific infection of the lacrymal glands and conjunctival sac. In addition to the ophthalmia, infection of the mucous membrane of the alimentary, respiratory, and urinary tracts have been shown to be exceedingly prevalent in animals deprived of vitamin A. Lesions of the central nervous system can also be produced and female animals fail to ovulate. The infections are not of any one pathological type, and the organisms which gain a footing owing to the weakened resistance of the mucosa are of the type commonly found there in small numbers during health. Night blindness was recognised clinically at the time of Hippocrates, and it is interesting to learn that even then eating liver was the traditional cure. Xerophthalmia has been recognised clinically in Vienna, Denmark, and Japan, and very rarely in this country. Genuine clinical deficiency undoubtedly has been met with, but only on very unbalanced diets, which no authoritative person would have countenanced for a moment.

Conclusion

In conclusion I wish to make one or two generalisations about inorganic and vitamin therapy, and finally to sound a note of caution.

In the first place, I would like to draw a distinction between this group of diseases and the bacterial group. The *prevention* of typhoid is brought about by improving sanitation and the cleaning up of the food-supplies, or, if this is not possible, one can do a great deal by vaccines, which were most efficacious during the war. The *cure* of typhoid involves quite different principles. If the patient does not die of toxæmia or weakness the natural reactions of the body will effect a cure and treatment consists in putting the patient in the best possible state to do this. In general, then, different medication is required for the prevention and cure of bacterial diseases. One has only to think of diphtheria, scarlet fever, and boils; but I need not multiply examples.

In diseases caused by vitamin or inorganic deficiency, on the other hand, exactly the same treatment brings about both prevention and cure. The whole object of medication is to provide a suitable supply—not too much and not too litte. In practice there is only one way to to this. Aim always at a good mixed diet. Add vitamins and the necessary salts where they are indicated, but do not be carried away by fads. Be cautious in transferring the results of animal experiments to human beings. Remember that rats don't get scurvy, and different species have totally different vitamin requirements. But always be wary of some deficiency when monotonous diets are being used, as, for instance, by the very poor. Under the category of monotonous I should certainly class the diets of infants and the rations prescribed for the treatment of gastric complaints, and I think too that some institution diets should probably be on the dangerous list. Mr. Augustine Courtauld, who spent a winter alone in Greenland in 1930 and 1931, part of the time completely snowed up, lived throughout on a most monotonous diet consisting largely of pemmican, margarine, and sugar which was quite free from vitamin C. He would undoubtedly have got scurvy but for the concentrated lemon juice which had been supplied in his ration.

Vitamin therapy just now is passing through rather an exuberant phase. Wonderful discoveries have been made, but exaggerated claims have been put forward based in some cases on too little evidence, and in others on a lack of scientific balance. Artificial sunlight is as good as vitamin D, but it is not a panacea for all ills. There is no real proof that the constipation so often seen in the out-patient department is due to too little vitamin B, and even the most massive doses of vitamin A will not cure pneumonia, or even prevent the common cold. Presently there will be a swing back against indiscriminate vitamin administration. I see signs of it already, and of course nothing can hold the field of popular therapy for long. When that happens, do not become cynical. Remember the ground that has been gained, the facts that have been proved; and continue to act upon them.

R. A. McCance, M.D., M.R.C.P.
Chemical Pathologist, King's College Hospital.

Fire at a Mental Hospital.—It is reported that on Wednesday last week the administrative block of the Parcgwyllt Mental Hospital of the Glamorgan county council was burned down. The fire did not reach the wards, in which there are about 1000 patients.

Sussex Provident Scheme.—Although the report submitted at the annual meeting at Brighton, on Nov. 25th, covered nine months only, it was reported that there has been a net increase of 2568 in the number of contributors, and 4864 in the number of contributors and their dependants. Hope was expressed at the meeting that very soon the total membership would reach 100,000, and so see the fulfilment of the ambition of the founder of the scheme, the late Dr. J. F. Gordon Dill. The total distribution made in respect of treatment of members was £16,297, made up as follows: £13,928 to the coöperating voluntary hospitals; £74 to associated voluntary hospitals; £1345 to infirmaries and educational authorities; and £438 to the coöperating Queen's Nurses' Association; the sum of £506 being refunded to members for treatment at non-coöperating hospitals, and for the extra benefits included in the supplementary section. Since the inception of the scheme in 1921, no less than £126,922 has been distributed under the above headings. Over £20,000 per annum is now going to the voluntary hospitals through the agency of the scheme.

SPECIAL ARTICLES

MEDICINE AND THE LAW

Mental Disorder following Head Injury

IN a case tried recently before Mr. Justice Avory and a special jury the plaintiff, A. B., claimed damages for injuries resulting from the defendants' negligence. At the age of 53 he was stated to have been a strong, healthy, intelligent man. On Jan. 1st he was involved in an accident in which he was shaken and struck on the head. For a few moments he was unconscious and on regaining consciousness he complained of pains in his head. He went to bed. He lost the power of speech and became worse until at the end of six weeks it was decided to remove him to hospital. There he improved somewhat but on his return home he had a relapse. He is now able to walk, but unable to feed, wash, or dress himself, and he seems unconscious of his surroundings. He shows signs of hallucinations, fears, and morbid dreads. His relatives claimed that his present condition resulted from the blow on the head and in the action they called medical evidence to support this contention. The defendants maintained that the plaintiff was not suffering from any form of neurosis resulting from the accident and affirmed that he was suffering from a psychosis—namely, manic-depressive recurrent insanity.

Dr. A. R. Abelson said that he attended A. B. on the night of the accident. The patient had a slight swelling in the parietal region, was slightly dazed, and complained of great pain in his head. On the third day he showed signs of muttering delirium; he became stuporous. He grew worse and had incontinence of urine and fæces; he lay on his back and his eyes bulged. He was taken to hospital where he stayed for six weeks. On his return he showed great improvement; he was able to walk and talk. Later he relapsed and now, although he walks about aimlessly and mutters incoherently, he seems to be oblivious of his surroundings. At the sight or touch of things he shows terror. Dr. Abelson stated that in his opinion the possibility of recovery was remote. In cross-examination he would not agree that A. B. was suffering from manic-depressive insanity, nor would he admit that, if he was suffering from this form of insanity, such insanity could not have resulted from the accident.

Dr. E. A. Blake Pritchard said that he first saw A. B. on Feb. 9th. He was in bed and made little or no response to questions. He exhibited occasional tremors and muttered and showed signs of fear. After ten days he became more responsive, took food, and regained continence. In May he was definitely better, but in October he was again tremulous, restless, and apprehensive, and seemed unable to appreciate the meaning of a question or of a request. Dr. Pritchard believed A. B. to be suffering from traumatic hysteria due to a blow on the head. He thought it possible that he might recover but held that complete recovery was improbable and there was a risk of further relapse. In cross-examination Dr. Pritchard denied that one form of mutism might be due to neurosis and another form to psychosis. Nor did he agree that in hysteria a mute patient tried to communicate his wishes by other means. He denied that the course of this illness was typical of manic-depressive recurrent insanity and emphasised that A. B.'s mental alertness during his temporary recovery was inconsistent with psychosis. His pulse was regular and normal. This was an unusual case, admittedly not typical of neurosis. Finally Dr. Pritchard stated that A. B. showed no signs of mania, nor was he depressed, nor did he exhibit symptoms of insanity. Moreover, although he was now aged 54, there was no history of previous mental illness and the family history was good. In answer to the learned judge, Dr. Pritchard said that he had no personal knowledge of A. B.'s previous history or family history, and he agreed that so far as those matters were concerned he was merely stating what had been told to him by the patient's wife.

At the close of the plaintiff's case the jury intimated that they were satisfied that the plaintiff's condition had not resulted from the accident. Counsel for the plaintiff, however, insisted upon his right to address the jury and did so, whereupon the jury changed their minds and asked to hear the defendants' evidence. Counsel for the defendants then addressed the jury and proceeded to called his evidence. During the defendants' evidence the foreman of the jury again told the judge that they were satisfied that the plaintiff was not entitled to recover damages. The judge asked if the jury were unanimous, and the foreman asked if they might retire. The judge indicated that the only question was whether or not the jury were unanimous, whereupon a juror rose and said that they were not. Another juror then said that members at his end of the box were agreed! The judge accordingly ruled that the jury should hear all the evidence.

Medical evidence on behalf of the defendants was given by Dr. W. A. Brend, who said that for 16 years he had been on the neurological staff of the Ministry of Pensions and that during that time he had examined many soldiers suffering from mental diseases. He told how, on Sept. 25th, 1933, he had examined A. B. in the presence of Dr. Abelson, and had formed the view that he was insane. Dr. Brend went on to say that he thought that in A. B.'s case there must have been a history of mental disorder, that he had never seen insanity of this kind result from shock, that where insanity had followed serious head and brain injury the onset had differed from the onset in A. B.'s case, and that he did not agree that the patient was suffering from traumatic neurosis. On Sept. 25th he saw him lying on a sofa; he took no notice of conversation; he got up partly dressed and hugged his arms to his body; his eyes were staring and terrified; his lips moved but no sound emerged, and he wandered from room to room and looked demented. On careful examination, however, there was no sign of organic injury and the physical condition was normal. Dr. Brend held that this was not a case of hysteria. In hysteria the patient was intelligent and communicated by writing; A. B.'s lack of control was inconsistent with hysteria, and the fact that he slept well negatived his being a case of anxiety neurosis. In cross-examination Dr. Brend agreed that A. B. was not simulating, that in the recovery periods between attacks of manic-depressive insanity a minute examination might reveal signs of mental instability, and that there was no infallible test of insanity. He stated that he had never seen hysteria-muteness of A. B.'s kind, nor had he seen in hysterical cases similar incontinence and inability to feed, wash, or dress.

Dr. J. H. Churchill said that he saw A. B. on Jan. 31st. He thought this an amazing case and regarded the lack of history of previous illness as its most amazing feature. He had recommended the patient to enter hospital, and agreed that on August 20th he was in the condition described by Dr. Brend. He had never known of a neurotic case showing A. B.'s symptoms, and he thought the patient suffering from insanity which could not have been caused by the accident. In cross-examination Dr. Churchill said that at first he had thought A. B. to be suffering from melancholia—the depressed side of manic-depressive psychosis—or that he was simulating. He stated that he had never seen a neurotic case so irresponsive, and that most neurotics were excitable and suffered from insomnia. But he agreed that the degree of responsiveness might vary and that some neurotics may sleep well.

Dr. J. G. Porter Phillips, physician-superintendent to the Bethlem Royal Hospital, said he had examined A. B. on Nov. 1st and 4th and that he agreed in principle with the evidence of Drs. Brend and Churchill. He had no doubt that A. B. was insane. In cross-examination Dr. Phillips agreed that it was more difficult to be precise in mental illness than in bodily illness, that A. B.'s condition might be caused by an injury, but said that it was most unlikely that these results could have come from the accident. He admitted this was a most unusual case and agreed that there were borderline cases between neurosis and psychosis, but he was emphatic that from his experience it was impossible to say that A. B. was suffering from neurosis—that, in fact, A. B. was certifiably insane.

Counsel addressed the jury, Mr. Justice Avory summed up, and the jury after a short retirement found for the defendants with costs. Judgment was entered accordingly.

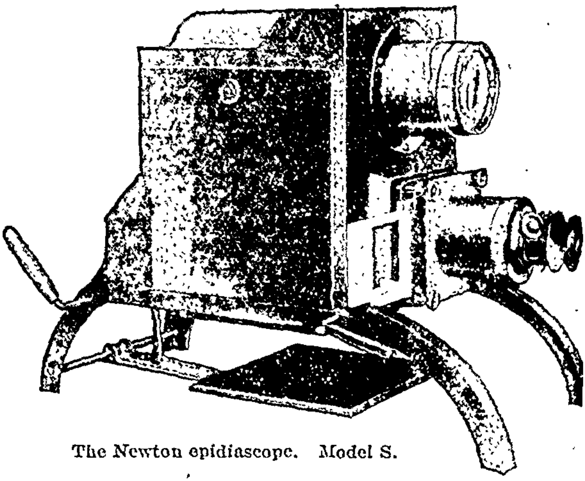
Eviction of Caravan Dwellers

The Stanley Urban District Council in the county of Durham decided to clear a piece of waste ground on which for some years people had been living in caravans. Last October several of these vehicles were removed; one, belonging to Mr. Harrison, an unemployed miner, stuck in the mud and was burnt by the council's officials. Mr. Harrison sued the council last month at the Consett county court for damages for the wilful destruction of his property. He did not challenge the legality of the eviction, but he objected to the method. The council explained to the judge that an attempt was made first to move the van, then to demolish it with crowbars; but the workmen who entered the van found it alive with vermin, and therefore set fire to it to avoid contamination. The judge held that the council's agents had made every reasonable effort to move the vehicle, and that its value was so negligible that it would have been foolish to expose the workmen to the risk of contamination with vermin. He entered judgment for the defendant council.

DONATIONS AND BEQUESTS.—Among other bequests the late Mr. Charles Lane of Birmingham left £1250 to the Queen's Hospital, Birmingham, and to the General Hospital, Birmingham, respectively, for a bed in memory of his mother; £1250 to the General Hospital, Birmingham, for a bed in memory of his brother, Thomas Richard Lane; £1250 to the General Hospital, Birmingham, in recognition of services rendered to his niece, Emily Lane; £500 to the Birmingham Royal Institution for the Blind; and £500 to Dr. Barnardo's Homes.—The late Dr. Charles Dai Hamilton left £19,000 to University College Hospital.—Under the will of the late Mr. J. Honeyman, of Elmwood, Cupar, the Dundee Royal Infirmary will receive £2000.

BRITISH EPIDIASCOPES

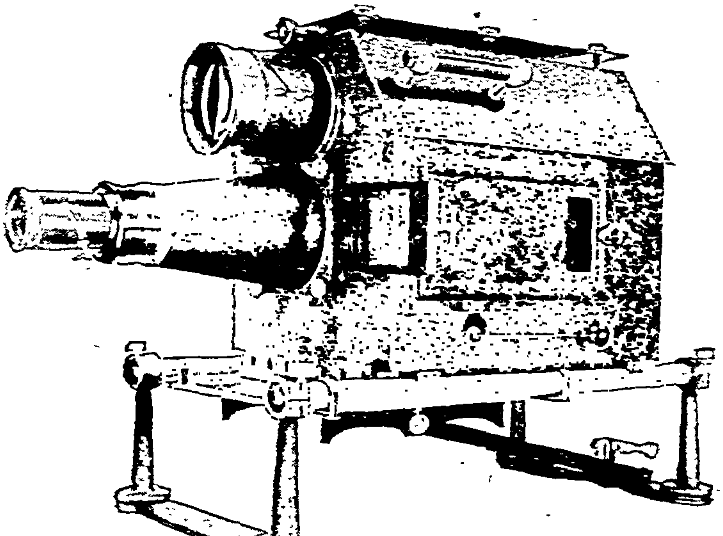
FOR the exhibition of pictures to either small or large audiences some method of projection must be used. In spite of the great development of the moving picture, perhaps even because of it, the use of a projector is becoming general. Where a diagram is to be shown or a picture exhibited which needs study and consideration a *moving* picture is not essential or even appropriate, quite apart from the question of its greater cost. If diapositives, commonly known as lantern slides, can be prepared their projection even to very large audiences presents no difficulty, and this is still the best method of demonstration of much of the material which has to be shown to classes of medical students. The preparation of lantern slides is a simple photographic process but it needs some facilities for carrying out such operations. The demand has therefore arisen for apparatus which will project a paper print or an illustration from a book, or any opaque object which must be illuminated from above. It is an obvious convenience if diapositives, photographic or otherwise, can be shown by the same appliance. An apparatus designed to fulfil this dual purpose is called an epidiascope, which in various forms has been made for many years principally by foreign firms, notably by Bausch and Lomb, Leitz, and Zeiss, all of which have turned out good models. English opticians have, however, made considerable efforts to provide apparatus which, both in price and quality, can compete with foreign products. Their enterprise has been stimulated by (1) the protective duties that are now levied on importations of foreign optical products, and even more by (2) the improvements that have taken place in the production of high-power filament electric lamps. This latter point is important as the makers of earlier apparatus were compelled to rely on the electric arc which, in spite of its efficiency, is a difficult method to apply to a relatively simple form of epidiascope, as well as being more difficult for an operator to handle unless he is expert. Nowadays a lecturer wants to be assured that the apparatus supplied will enable an exhibition of a series of pictures taken from different sources to be given without skilled assistance; the operator of the modern epidiascope needs only be able to produce the pictures in the order previously arranged, and to manipulate a switch at a signal from the lecturer.



The Newton epidiascope. Model S.

Three British firms are now producing epidiascopes, Messrs. Charles Baker, of High Holborn, Messrs.

Newton and Co., of Wigmore-street, and Messrs. Ross Ltd., of Clapham Common. Through the courtesy of these firms an opportunity has been provided of testing their machines under normal working conditions. It is not intended to make any critical comparison between them; indeed such comparison would be difficult as each has characteristics which might have an appeal to some users or which would fulfil some particular need. The details of design and construction can be obtained from each maker, but it may be of interest to draw attention to some differences between them.



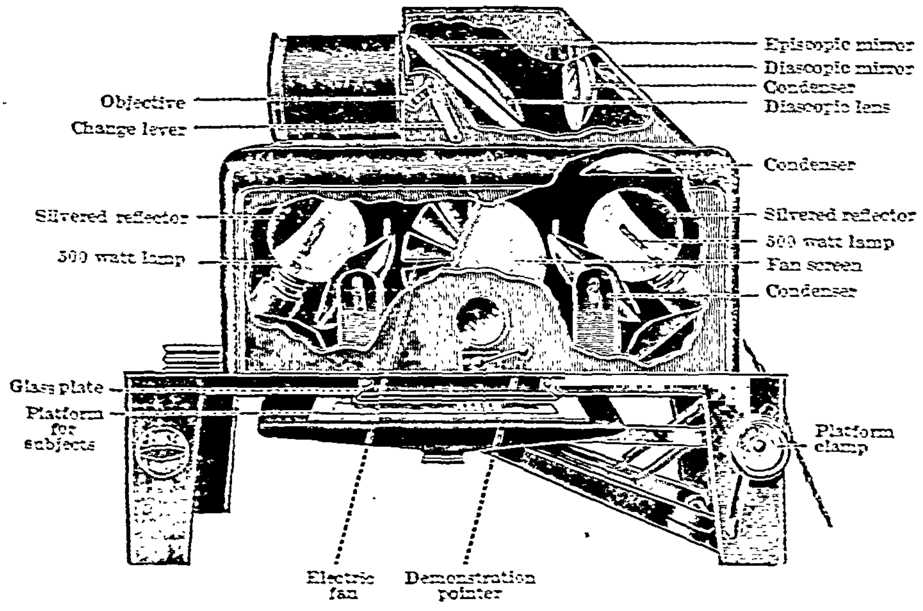
The "Ross" epidiascope.

Messrs. Charles Baker have paid much attention to cooling, and have so designed their apparatus that only one projection lens is needed. The body is a substantial aluminium casting ensuring stability and durability. Two 500-watt lamps are used in silvered bulbs so that illumination is ample for most purposes. Such electric lamps would, however, cause a rise of temperature sufficient to damage delicate objects, and to provide against this Messrs. Baker introduce twin electric fans so disposed that a large amount of cool air continually passes over the object to be exhibited. The efficiency of this mechanism is unquestioned, but it has the inevitable disadvantage that the hum of the fan motor can be heard, a point to which some lecturers might take exception. The movement of only one lever is necessary to change from episcopic to diapositive projection, or vice versa. Any subject up to 6 in. square can be projected, but larger objects or surfaces can be shown by sliding the subject across the supporting stage. The lamps provided are the same voltage as the supply, so that no subsidiary resistance is necessary.

Messrs. Newton and Co. make more than one type of apparatus; the model tested was their "Model S," the least expensive in the list. It is fitted with one 500-watt 100-volt lamp, which therefore requires an external resistance for any higher voltage. Their special diffusion reflectors ensure even illumination over the illuminated surface, and a single cooling fan is provided. Two projection lenses are supplied, one of 16 in. focal length for episcopic, and an achromatic lantern-slide objective for diascopic projection. A single lever movement changes from one form of projection to the other. The provision of two optical systems inevitably increases the cost, but there are definite advantages in such an arrangement.

Messrs. Ross Ltd. have evolved an appliance in which either a 500-watt or 1000-watt lamp are interchangeable, thus providing a means of altering the intensity of illumination to suit either lecture theatres or small class-rooms. These lamps are supplied in the correct voltage, so that no extra resistance is necessary. Two condenser lenses are used to project the light on to reflectors and so on to the object to be shown. No fans are provided for cooling purposes, but the method of ventilation is such that the specimen or diagram is kept reasonably cool by the current of cool air which enters the lower part of the lamp house and is drawn over the exhibit. Optically this apparatus is of a very high order. The lamp house is solidly made, has a somewhat imposing appearance, and should stand hard wear. Whether the method of cooling is efficient enough must depend on individual requirements, but it is only fair to say that the internal temperature was found to be somewhat higher than in fan-cooled instruments. The change over is by a single lever, and if it prove necessary to tilt the instrument to get the image on to the screen a correcting adjustment is provided to maintain critical definition over the whole area.

This available range of British-made epidiascopes provides a choice from which it should be possible to select an apparatus suited to any reasonable requirement of high quality and at reasonable price.



The "British" epidiascope (Baker) showing parts. Since this illustration was made various improvements have been introduced, notably another fan.

CORRESPONDENCE

SODIUM CHLORIDE IN ADDISON'S DISEASE

To the Editor of THE LANCET

SIR,—At the discussion on diseases of the suprarenal gland reported in your last issue, the recent work of Dr. R. F. Loeb and his colleagues was referred to by Prof. Woollard, but its practical application to the treatment of Addison's disease was hardly mentioned. Loeb showed (Science, 1932, lxxvi., 420) that the sodium of the blood was reduced from the normal figure of 140 millemolecules to less than 130 millemolecules in three cases of Addison's disease. Together with Atchley, Benedict, and Lelland he found (Jour. Exper. Med., 1933, lvii., 775) that the same phenomenon existed in dogs whose suprarenal glands had been removed. Loeb, Atchley, Gutman, and Jillson (Proc. Soc. Exp. Biol. and Med., 1933, xxxi., 130) tried the effect of giving sodium chloride to a patient with Addison's disease. The dose given was a large one, 15 g. in the day, but its effect on the patient was most striking as the patient rapidly regained strength and energy, the skin got a little paler and the blood sodium approached normal. When the sodium chloride was withdrawn for 24 hours the patient became seriously ill. These observations have been confirmed by other workers in the United States and Canada, and I have recently been told by Dr. Loeb of one patient whose dose of cortin had been reduced from 10 c.cm. to 2 c.cm. a day, following the giving of 15 g. of sodium chloride.

I have had no experience of this method of treatment, but the results seem so striking that I hope those who are treating patients with Addison's disease will test its value. Even if the sodium chloride cannot replace the whole of the cortin, it may be able to reduce the cost of the treatment very considerably.

I am, Sir, yours faithfully,

GEORGE GRAHAM.

Harley-street, W., Dec. 18th, 1933.

EPIDEMIC VERTIGO

To the Editor of THE LANCET

SIR,—The condition of epidemic vertigo described by Dr. Leyton last week (p. 1392) is of great interest, but is not to be regarded as a separate and distinct disease. Dr. Leyton is right, moreover, in rejecting the idea of it being due to hypoglycæmia. The condition is merely one of the protean manifestations of influenza. Cases may roughly be divided into two groups:—

(1) Those in which the vertigo—usually, but not always, preceded by signs of nasal or pharyngeal catarrh—is the only symptom; or, in severer cases, is one of a group of cerebral symptoms.

(2) Those in which the vertigo is a symptom; usually early, occurring in one of the more normal respiratory types of influenza.

The second group, no case of which has come under my notice, was described as far back as 1803. William Falconer, in his account of the influenza epidemic of that year as observed at Bath, states:—

> "Vertigo, and that to a considerable degree, was, in some persons, one of the first signs of the disease, and, in several instances, very alarming and distressful. I saw a lady affected to such a degree as not to be able to raise her head from the pillow without losing all sense, and to whom all objects appeared thrice multiplied; and these uncouth symptoms continued four days in their full extent. I observed in several persons, that where the vertigo was most troublesome, and appeared early in the disease, the peripneumonic symptoms were but slight, and vice versa. Two of the worst cases of the peripneumonic kind that I saw, were *not attended* with any symptoms of vertigo. Those who were attended with vertigo, even to a less degree than in the case above described, were nevertheless unable to read a letter or a few lines in a book; and in several a degree of delirium took place during the night, but not, as I saw, to any violent degree." (Quoted in "Annals of Influenza," Sydenham Society, London, 1852, p. 254.)

And he adds: "I have not noticed any bad consequences that seem connected with the vertigo, which, though threatening generally, went off in a few days." (Ibid., p. 261.)

Epidemics of the first group occurred in 1924 and 1925. Cases varied in severity from those in which there was merely intermittent dizziness; through those in which there was marked vertigo with definite Rombergism; to those in which the vertigo, nearly always accompanied by severe occipital headache, was so intense that the patients were unable even to sit up in bed. In this last group of severe cases there were disturbances of vision, objects moving about and being seen out of all perspective, distant objects seeming relatively larger than those nearer at hand. These cases also tended to develop later symptoms suggesting mild encephalitis lethargica, with difficulties in reading, lack of concentration, and defects of memory; all of which sequelæ, however, cleared up with appropriate treatment.

The only physical sign discernible was tenderness over the upper cervical spine and pain on tilting the head back, as opposed to the reverse condition in meningitis. I found that in nearly every case the headache and dizziness, even where it had persisted with severity for days, vanished rapidly when cold was applied to the back of the neck. I used to have a rubber hot-water bottle three-quarters filled with stone cold water and directed the patient to lie on this for half an hour, so that the upper part of the cervical spine and the lower part of the occipital region were in contact with the cold.

In view of the symptomatology and response to treatment I came to the conclusion that the condition was due to a local congestion consequent on a blood-borne infection of the upper part of the cerebellum and the posterior and inner aspects of the occipital lobes of the cerebrum.

I am, Sir, yours faithfully,

Southport, Dec. 16th, 1933. A. N. M. DAVIDSON.

To the Editor of THE LANCET

SIR,—I have read with particular interest the letter in your issue of Dec. 16th under the above caption, having myself for the last three or four weeks fallen a victim to sudden and recurring attacks of vertigo. These attacks, which are not associated with any gastro-intestinal symptoms, are particularly intense on getting out of bed in the morning, but are liable to recur during the day on stooping or on any sudden movement of the head. The urine is normal; temperature subnormal and blood pressure subnormal. For the last week I have been taking glucose freely, and the attacks during the day have practically ceased.

I am, Sir, yours faithfully,

London, W., Dec. 16th, 1933. "PARK CRESCENT."

CLIMATIC BUBO

To the Editor of THE LANCET

SIR,—In your issue of last week (p. 1365) there appeared an article under the above title by Surg. Lt.-Cdr. E. R. Sorley and Surg.-Cdr. P. L. Gibson. The authors very truly point out that recent researches have advanced our knowledge of climatic bubo (and lymphogranuloma inguinale, the same condition recognised in temperate countries) very considerably. They then proceed to describe the results they have obtained by a particular form of treatment, completely disregarding the axioms which our newer knowledge has taught us.

In evaluating any particular form of treatment of a given condition it is essential that the diagnosis should be first established. The authors have treated 20 cases of "climatic bubo and allied diseases." The allied diseases are chancroid and gonorrhœal infections—conditions which are in no way allied to climatic bubo. For their "criteria" in diagnosis of climatic bubo they rely on statements enunciated nine years ago which do not hold good to-day in view of recent observations. The authors are not aware, apparently, that there is an initial lesion in climatic bubo infections and that double infections with other venereal diseases may be seen. Difficulties were encountered by them in attempting to carry out Freil's test, so that there was no confirmation or otherwise of the diagnosis in their cases.

Of the 20 cases, 8 were chancroid infections with venereal bubo, 4 were cases of gonorrhœa and venereal bubo, and in 8 the clinical diagnosis was climatic bubo. To base any conclusions upon the results obtained in 8 unconfirmed cases of climatic bubo is, I believe, unwarranted, even though those conclusions in regard to shortening of the invalidity period be correct.

The modified method of treatment which the authors put forward as superior to other forms "consists in giving the drug [tartar emetic intravenously] rapidly enough to ensure the production of a reaction"—"a well-marked though transitory reaction." What the reaction consists of is not explained. It would be interesting to know whether this mode of treatment is not in reality a form of shock therapy rather than a treatment by tartar emetic. Without going into detail it may here be stated that while antimony has been found useful by many observers in the treatment of early cases of climatic bubo, some form of shock therapy has found more supporters, as might be expected since the disease is due to an ultramicroscopic virus.

I am, Sir, yours faithfully,

London, W., Dec. 18th, 1933. HUGH S. STANNUS.

IMPACTED MOLAR TEETH

To the Editor of THE LANCET

SIR,—I have observed that the wisdom teeth or their neighbours, owing to slow eruption and ulceration on the surface of the gum, give rise to disturbing pathological changes in the mouth. Necrosis and parotideal abscess of some formidableness with severe rigidity of the jaw may follow. Thereby Stenson's duct becomes affected like an inflamed appendix. Acute toxæmia gives cause for anxiety unless the surgeon recognises the tooth before the jaw is spasmodically fixed.

Among the natives of India, the lascars or sailors, impacted ulcerative crowns produce sometimes severe parotideal inflammatory swellings. On the removal of the offending tooth, with hot fomentations and oral disinfection, the subject recovers. A facial incision to let out pus may be necessary. I have seen several of these cases, it being almost impossible to open their mouths. As the wisdom teeth are often ill-formed it is not difficult to remove them by the proper route. When I was registrar to the Cancer Hospital a case was admitted with cachexia and wasting in which a suspicion of cancer had arisen; but after a piece of dead bone was removed and the mouth cleaned, the patient completely recovered and rigidity disappeared.

If this letter seems unduly long, it is to encourage my professional brethren to reply to Mr. Bowdler Henry's letter in THE LANCET of Nov. 4th (p. 1064), and to support him in a lecture at the Royal College of Surgeons on the above subject. A scientific address from an odontologist should be very enlightening to those who do not recognise the importance of impacted molars in causing disease.

I am, Sir, yours faithfully,

JOHN FRED. BRISCOE.

Authors' Club, Whitehall-court, S.W., Dec. 19th, 1933.

"NOSE CLOSING" RAYS

To the Editor of THE LANCET

SIR,—Mr. A. F. Dufton and Mr. T. Bedford, to whose experiments you alluded last week (p. 1385), have not chosen to visit my laboratory or use my methods of research. I found that in those with a restricted nasal air-way increased obstruction and actual closing of one or even of both nostrils may be brought about by exposure to certain sources of infra-red rays. The effect of the rays on wide-nosed people can only be evidenced by first restricting their nasal air-way by means of a screw nose-clip applied to the wings of the nostrils. Dufton and Bedford have inserted a tube in one nostril and connected this with an aneroid recording tambour, leaving the other nostril open for breathing through. Now the opening of one nostril in wide-nosed people is much larger than is needed for the quiet breathing which pertains in the resting position, and it is easy to show with the help of a water manometer that the air-way of the one open nostril can be greatly diminished without significantly altering the small negative pressure produced by inspiration. The method used by Dufton and Bedford can then only give results in those who have the one open nostril greatly restricted.

My critics do not appear to have worked out the energy distribution of the sources of heat used by them or to have consulted the paper read by me at the 2nd Light Congress, Copenhagen, 1932 (Quart. Jour. Exper. Physiol., 1933, xxiii., 35). In this paper are given the energy distributions as worked out by my physicist colleague, Dr. H. J. Taylor. To test my claim that a bright source acts as a "nose opener" and a dull source as a "nose closer," Dufton and Bedford have chosen to use two electric fires, one bright and the other dull, but both were backed by reflectors, and the fires were placed so that the full effect of the reflectors fell upon the subject's face, as shown by the illustration in their paper. Now the reflectors give off infra-red rays which suffice to neutralise any difference of brightness. Both these fires are "nose closers" to those with a restricted nose-way. Their experiments therefore do not refute my observations. There are many other points in their paper which can be dealt with in a paper which I am reading to the Institution of Heating and Ventilating Engineers on Feb. 14th next, when the subject can be fully debated.

Meanwhile here is a simple experiment which anyone can try. The effect of a small bowl electric heater (the reflector can be removed) on the skin of the face can be compared with that of a 250-watt incandescent lamp. This should be screened by a sheet of glass to cut off the rays given off by the hot surface of the lamp. The lamp, so screened, when approached very close to the face produces a pleasant sensation of warmth, while in those with a restricted air-way the nose will be wide open. The heater, on the other hand, on a less near approach to the face gives a less pleasant and oppressive sensation of heat and closing of the nose in sensitive people. Be it noted the irradiating energy of the lamp held close to the face is greater than that of the heater. This is a proof of my contention that the quality of the rays coming from a source is important.

I am, Sir, yours faithfully,

Dec. 14th, 1933. LEONARD HILL.

THE TRANSITORY CORTEX OF THE SUPRARENAL

To the Editor of THE LANCET

SIR,—According to a report published in your last issue (p. 1372), Prof. H. H. Woollard stated that the "transient cortex" of the suprarenal "is peculiar to man and the apes." The mouse, however, enjoys the same distinction. The transitory cortex of the mouse suprarenal was discovered by Masui and Tamura (Jap. Jour. Zootech. Sci., 1924, i., 55), and the most detailed studies are those of Miller (Amer. Jour. Anat., 1927, xl., 251), Deanesly (Proc. Roy. Soc., B, 1928, ciii., 523), and Whitehead (Jour. Anat., 1933, lxvii., 387). The transitory cortex of the mouse suprarenal has often been regarded as abnormal. I hope soon to review the whole of the literature. According to Pennacchietti (Arch. ital. anat. embriol., 1929, xxvi., 528) a transitory cortex is present in the suprarenals of the guinea-pig and rat. Confirmatory studies are in progress in this department.

I am, Sir, yours faithfully,

RAYMOND WHITEHEAD.

Department of Pathology, University of Manchester,
Dec. 16th, 1933.

WARD AND DORMITORY INFECTIONS

To the Editor of THE LANCET

SIR,—May I make a few remarks on the most interesting discussion reported in THE LANCET of Dec. 9th (pp. 1306 and 1317). In the first place the necessity for ample floor space seems to be regarded as a somewhat novel idea. But as a matter of fact the question was one which occupied the attention of the medical superintendents of the M.A.B. fever hospitals 40 years ago, and my friend and colleague, the late Dr. Foord Caiger, was one of the most prominent in insisting upon the necessity, as his reports to the Board show—reports which, I fear, did not get far beyond the Board. The managers of the M.A.B. backed up their superintendents, and in most of their hospitals the requirements of the Local Government Board were adhered to. On one occasion in 1894 Sir Joseph Lister (as he then was) visited the Eastern Hospital at Homerton in order to see some patients who were undergoing the then new serum treatment for diphtheria, and I shall never forget his look of surprise and his exclamation when he entered the first ward to which I took him: "Dear me, what a *lot* of space you have round your beds!"

There are other factors to be taken into consideration besides the reduction in floor space. When in times of emergency extra beds are placed in wards, it is very rarely that additional nursing staff is also provided. Consequently the same number of nurses must attend to a larger number of patients and aseptic precautions run the risk of not being thoroughly carried out. You may shut up your patients in chambers which are completely separated from one another and yet infection will spread if you do not employ a sufficient number of nurses, as I showed in the case of an isolation ward at the Eastern Hospital many years ago. Moreover, in discussing infection in the dormitory we must not overlook conditions favourable to the spread of infection outside it. Many years ago I visited a public school in which an outbreak of diphtheria had occurred in a certain house. No fault could be found with the dormitories, but when I inquired as to what was taking place outside, I found that the boys were allowed to crowd together into one another's studies of an evening, 15 to 16 boys in a study meant for one or two, their heads all close together as they pored over and discussed some interesting book or other object on the table.

One word on the infectivity of the group of infectious bowel disease (enteric, dysentery). That in these diseases infection can spread more or less directly from person to person appears now, I am glad to say, to be generally admitted. But it does not seem long since the very idea was treated with scorn, owing perhaps to the teaching of Murchison. My predecessor at the Eastern Hospital, Dr. A. Collie, was in his day almost alone in holding the present view. But I had more trouble in preventing the staff who were attending to the typhoid patients from catching the disease than in preventing its infection from spreading to patients suffering from other affections.

I am, Sir, yours faithfully,

Hampstead, Dec. 17th, 1933. E. W. GOODALL.

THE CAREY COOMBS MEMORIAL

To the Editor of THE LANCET

SIR,—The fund which you kindly announced earlier in the year (THE LANCET, July 15th, p. 156) is now approaching £1300. As the committee are anxious to invest the money, any still wishing to subscribe are requested to send their subscriptions to me at 13, Lansdown-place, Clifton, Bristol, 8, at their earliest convenience.

I am, Sir, yours faithfully,

H. ELWIN HARRIS, Jun.,

Dec. 13th, 1933. Hon. Sec., Carey Coombs Memorial Fund.

EVIDENCE OF BLOOD-GROUPS

To the Editor of THE LANCET

SIR,—In THE LANCET of Dec. 9th (p. 1338) you refer to the case of Rex *v.* Loughnan, and mention my evidence dealing with the blood-groups. You say, very rightly, that as the prisoner cannot be compelled to submit to a blood test, such evidence must be of necessity inconclusive. I should like to point out that in the interests of justice there is a more important aspect of the matter. If it is established by test that the blood on the clothing of the accused belongs to a different group to that of the deceased then, so far as this part of the evidence is concerned, the accused is absolutely absolved.

I am, Sir, yours faithfully,

G. ROCHE LYNCH.

Department of Chemical Pathology, St. Mary's Hospital,
Paddington, W., Dec. 15th, 1933.

WHAT IS "ART PAPER"?

To the Editor of THE LANCET

SIR,—I am indebted to "One of Them" for drawing my attention to the statement I made in your issue of Nov. 11th that my recent Life of Lettsom was printed on "art paper." This was an error on my part. I should have written: "imitation art paper." This may not appear, at first sight, very different; but the difference in fact is so great that possibly it may be useful to producers of books, and especially medical authors, if I summarise an explanatory letter I have received from the makers of the paper on which the book is really printed.

From this it appears that paper can be made from rag, mechanical wood-pulp, chemical wood-pulp, soda-pulp, and esparto, or any combination of esparto and wood-pulp. The best hand-made paper is made from rag. Newsprint is almost entirely mechanical wood-pulp with a small percentage of chemical. Many books are printed on paper made from pure chemical wood-pulp. This is quite a satisfactory paper for most purposes apart from illustrations. But, where fine reproduction in half-tone or colour is required, "real art paper" is necessary. This paper has, as its body, a mixture of wood-pulp and esparto with china clay, and has a coating on the surface of blancfixe, satin-white, or china clay. It is not sufficiently hard wearing, as your correspondent points out, for book production. Many publishers, however, use it for plate illustrations in books, employing at the same time chemical wood-pulp paper for the letterpress; but in so doing they cannot intersperse the illustrations in the text.

According to the paper-makers, a pure chemical wood-pulp paper is not anything like as lasting as one made from 80 per cent. esparto and 20 per cent. chemical. This percentage would appear to provide the ideal paper for book production, as it can be made with a super-calendered finish so as to take half-tone blocks as well as letterpress. It is ideal, therefore, for the production of medical text-books and works of reference where illustrations are required next the subject matter. And it is the paper on which "Lettsom" is printed.

I am, Sir, yours faithfully,

J. JOHNSTON ABRAHAM.

Queen Anne-street, W., Dec. 16th, 1933.

VIENNA

(FROM OUR OWN CORRESPONDENT)

TUBERCULOSIS WELFARE CENTRES

THE official report, issued by the Ministry of Health, on the work done during 1932 by the tuberculosis welfare centres in Austria has recently been published. There are at present 94 such centres in the Republic: 31 work in towns, 8 in industrial districts, 13 in rural districts, and 42 in mixed districts. The staff employed includes 155 medical men, 99 qualified nurses, and 74 assistant nurses, besides 64 lay helpers. The number of new patients examined and cared for in 1932 was 36,332 (44 per cent. males, 56 per cent. females). Of these, 2693, or 7·5 per cent., were seriously ill (57 per cent. males, 43 per cent. females); 15,080, or 41 per cent. of the total, were insured against illness. All the centres together dealt with no less than 301,510 patients in 1932, of whom 164,072 were under constant supervision. Of these, 11,861, or 7·2 per cent., had open tuberculosis. In other words, in each 10,000 of the population there were 28 persons with manifest disease. It is interesting to note that during the year 1581 severe cases were notified to the centres as a consequence of the "Notifiable Diseases Act," which makes open tuberculosis notifiable in Austria. Of the total number of newly notified persons 24·5 per cent. were children. The searching examination of 2021 families revealed 241 (26 per cent.) of new serious cases which had hitherto escaped notification. The medical men attached to the centres made 191,164 complete examinations, out of which 154,376 were control examinations and 36,778 were first examinations, including sputum, X rays, and biological tests.

The work of the centres includes also the investigation of the housing conditions. Out of 20,593 lodgings, 80 per cent. could be regarded as not overcrowded, i.e., they were inhabited by not more than two persons per habitable room. Among 2977 lodgings of seriously diseased persons, 84 per cent. were not overcrowded. As regards sleeping conditions, only 14 per cent. of all diseased persons under observation had separate bedrooms; 86 per cent. share their bedroom with others; rather more than half of these with two or more companions. In many cases (23 per cent.) the diseased person shared a bed itself with other (one or more) persons, often (17 per cent.) with children. It is a satisfactory feature that since 1926, when the welfare centres began work on a large scale, the housing conditions show a marked decrease in overcrowding. It has been effectively combated by removal of the patients from the lodging, by removal of the endangered children, or by rearrangement of accommodation. In 10 per cent. of cases the obduracy of the parties concerned nullified all attempts at amelioration of housing conditions.

The report points out that the scope of the centres, as well as the amount of work done by the staff, is constantly increasing, especially the number of entire families examined. The mortality from tuberculosis is said to be dropping slowly but consistently. The morbidity, however, seems to be rising, especially that from open tuberculosis; this rise may be due to the poor earning capacity even of those who are in work, as well as to malnutrition arising from unemployment.

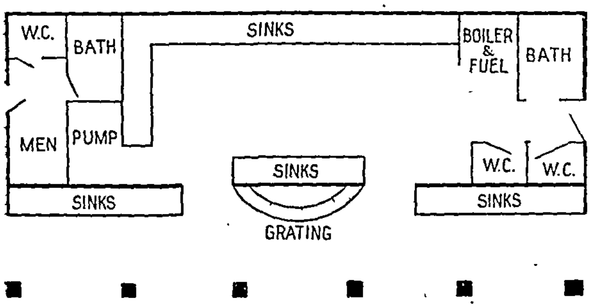
NEW WORK ON HÆMOGLOBIN

At a recent meeting of the Vienna Biological Society Prof. Haurowitz, of the University of Prague, delivered a lecture on the subject he has made his own—the chemistry of hæmoglobin and its derivatives, including its biological properties. He pointed out that the exact chemical constitution of the colouring matter of the blood is now known and it can be manufactured artificially. Each species of animal has its own colouring matter, and in human beings there exists a marked difference between the hæmoglobin of the adult and that of the new-born. The latter is very resistant to lack of oxygen, a fact which, he said, explains why in cases of gas poisoning adults may be found dead, whereas an infant found in the same room is still alive. Research now being undertaken with regard to changes in the percentage and constitution of hæmoglobin in various pathological conditions of the blood are expected by Prof. Haurowitz to have a profound bearing on therapeutics.

WATER FOR THE VILLAGE

THE accompanying sketch and plan show the village water-house to which Mr. J. H. Coste referred in the Chadwick lecture, reported in our issue of Dec. 9th (p. 1354). In that lecture he pointed out that a piped water-supply to individual houses cannot be available in many districts for some years to come, but in every village there ought to be a public supply if only in the form of a stand tap, well, or pump.

This public supply might be placed in a water-house—or, as Mr. Coste calls it, hydrarium—with a public fountain, a lavabo for domestic washing (such as one sees on the continent) and baths. The one illustrated has outdoor and indoor sinks for domestic washing, a room in the main hall for ironing tables and mangles or wringers, and lavatory and bathing accommodation for both sexes. A central bowed projection, which may be treated ornamentally, has drinking fountains and taps for filling pails for water to take home. Water can be stored in an overhead tank, and if this is done the structure must of course be strong enough to bear its weight. To prevent freezing the flue from the boiler can be carried (in winter) under the tank. Alternatively, the tank may be underground. Mr. Coste suggests that chlorinating arrangements should be near the pump; or access to the tank may be by a ladder to the roof or by a manhole to an underground tank. Where water is scarce, waste water may be used for flushing. A small septic tank and a clinker-bed sewage installation deals with sewage. A drying green may be arranged around or at one or more of the sides of the building, which must, of course, be put near a suitable source of water.



Mr. Coste's proposals are of special interest at a time when the water-supplies of many villages have failed. Apart from the other amenities indicated, a single source of water, efficiently managed, would be more reliable than the shallow private wells in general use, and the arrangements for baths should be welcome. The erection of such a water-house might well be considered by anyone who is trying to improve conditions in the countryside.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 9TH, 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 9 (last week 3); scarlet fever, 3966; diphtheria, 1403; enteric fever, 29; acute pneumonia (primary or influenzal), 1143; puerperal fever, 28; puerperal pyrexia, 95; cerebro-spinal fever, 16; acute poliomyelitis, 12; encephalitis lethargica, 9; dysentery, 21; ophthalmia neonatorum, 56. No case of cholera, plague, or typhus fever was notified during the week.

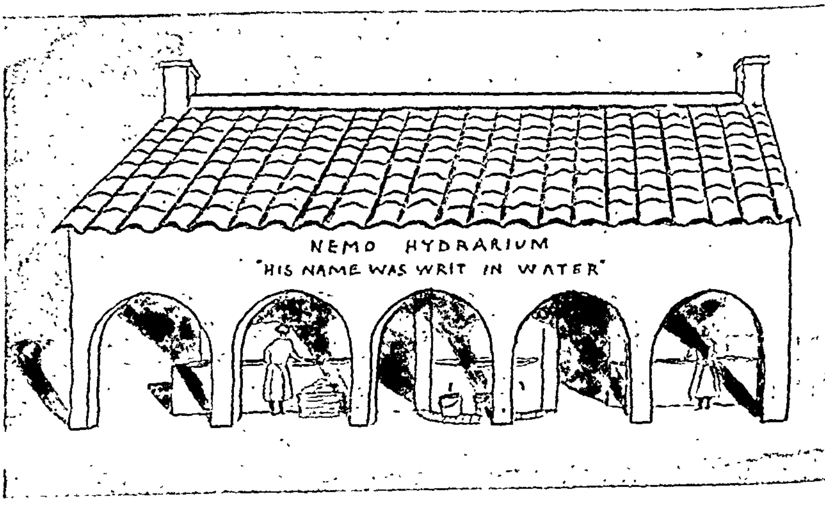
The number of cases in the Infectious Hospitals of the London County Council on Dec. 12th–13th was as follows: Small-pox, 14 under treatment (last week 11 and 2 under observation); scarlet fever, 3101; diphtheria, 2154; enteric fever, 6; measles, 530; whooping-cough, 187; puerperal fever, 12 mothers (plus 2 babies); encephalitis lethargica, 256; poliomyelitis, 6; "other diseases," 230. At St. Margaret's Hospital there were 12 babies (plus 6 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 28 (4) from measles, 14 (1) from scarlet fever, 26 (5) from whooping-cough, 68 (16) from diphtheria, 41 (12) from diarrhœa and enteritis under two years, and 70 (13) from influenza. The figures in parentheses are those for London itself.

Grimsby reported the only death from enteric fever. Manchester reported 5 deaths from measles, Stockton-on-Tees 4. Three fatal cases of scarlet fever were reported from Huddersfield. Of the fatal cases of diphtheria 4 occurred at Dagenham, West Ham, Leeds, Liverpool, and Merthyr Tydfil, and 3 at Birmingham. Five deaths were attributed to influenza at Stoke-on-Trent, and 3 deaths at Liverpool, Manchester, Birmingham, Bristol, and Swansea.

The number of stillbirths notified during the week was 255 (corresponding to a rate of 47 per 1000 total births), including 36 in London.

FOOD POISONING AT BIRMINGHAM.—On Dec. 6th about 180 persons took supper at a Birmingham hotel, the menu being grape-fruit cocktail, soup, fish, turkey, iced pudding and coffee, sausages, potatoes, and French beans being served with the turkey. More than 100 of them suffered next day from vomiting and pyrexia of varying severity. Investigation by the public health department of articles of diet taken by various guests suggests that one particular article of food was responsible for the digestive disturbance, but the results of bacteriological examination are not yet available. Materials derived from one patient indicated infection by a common food-poisoning micro-organism.


NEMO HYDRARIUM
"HIS NAME WAS WRIT IN WATER"

The village water-house.

OBITUARY

SIR WILLIAM WHITLA, M.D. Q.U.I., LL.D.

EMERITUS PROFESSOR, QUEEN'S UNIVERSITY OF BELFAST

We announced last week the death of Sir William Whitla, who had for so long a period filled very high positions in the medical and social world. The event occurred on Monday, Dec. 11th, at his house in Belfast. He was 82 years of age.

William Whitla, the son of Mr. Robert Whitla of Monaghan, was born in that town in 1851. Shortly after leaving school he was apprenticed to a large firm of dispensing chemists in Belfast, a fact which was to influence his whole future. On the termination of his articles he entered Queen's College, Belfast, where he had a brilliant career as a student. Qualifying in 1873, and proceeding to the M.D. degree in 1877, he graduated with the highest honours, receiving special commendation and the gold medal. He was appointed soon afterwards resident medical officer and superintendent of the Royal Victoria Hospital, when his exceptional ability, both as physician and administrator, became evident; he practically revolutionised the work of the institution. At the end of his term of office he commenced practice in Belfast, when his success was instantaneous. He was invited by the professor of surgery to assist him at private operations —for at that time his bent was chiefly surgical—but he soon perceived that his future lay in medicine. He rapidly developed an extensive practice, and in a few years, both in the city and the surrounding district, his professional connexions became very extensive. In his early days of practice he was a tireless worker, and when called to see a case he came and went so swiftly that many people thought that he never left his house—a tribute to his energy in days of slow transport. Before the age of 30 he was physician to the Royal Victoria Hospital, while he was also elected as physician to the Belfast Ophthalmic Hospital and to the Belfast Hospital for Women and Children. His association with the University of Belfast was from the beginning very close, from the time when under the original corporation it was known as Queen's College, until the day of his death. He was a member of the senate in 1886, he was an examiner in medicine at the University in the following year, and rapidly became a marked man as clinical physician and educational authority. With his appointment as professor of materia medica new life was breathed into the teaching of a dry and difficult subject.

SIR WILLIAM WHITLA

[Photograph by Elliott & Fry

His famous work, the Elements of Pharmacy, Materia Medica, and Therapeutics, made its first appearance in 1882. In this, within a remarkably moderate compass, he managed to make into one broad road, easy for the travel of the student, the three avenues representing existing knowledge of the subjects. The work was at once recognised as an important compendium, valuable alike to practitioners, dispensing chemists, and medical students. It has passed through 12 editions, and has become one of that select group, a classic. In 1891 there appeared his well-known Dictionary of Treatment. This work, too, was to achieve the distinction of many consecutive issues, being published also in America, while an edition appeared later in Chinese. The volumes were steadily kept up to date by the author for a long period, but went out of print some 25 years ago. The interval, however, was well employed, for in 1912 the fifth edition was issued, requiring considerable changes and additions to reflect rapid scientific progress. At this date in nearly every department of therapeutics the work was rewritten, and it could be regarded practically as a new book although possessing the leading characteristics of the former editions. The articles dealing with the therapeutics of gynæcology and obstetrics were now taken over in excellent manner by Prof. R. J. Johnstone, of the Belfast Maternity Hospital and Whitla's colleague at the Royal Victoria Hospital. In the new shape well-earned popularity was achieved by the issue of six or seven more editions. Prof. W. W. D. Thomson, in a memorial note which follows below, gives dramatic information as to the resuscitation of the work. In 1908 appeared the Manual of the Practice and Theory of Medicine in two volumes, the aim of the work being "to afford a busy practitioner in the most convenient and condensed form a series of independent articles upon the different diseases which fall under the province of the physician." The dictionary form of the work on treatment necessitated, in the manual dealing with the practice and theory, a certain amount of repetition, for the new work was obviously an introduction to its predecessors. It was immediately recognised as a valuable source of reference, and as completing a remarkable survey of accepted professional knowledge.

To return to Whitla's professional life. In 1887 he was called on to preside over the section of therapeutics at the meeting of the British Medical Association at Dublin, and at the International Congress of Medicine, held in Rome seven years later, he was the honorary president, representing this country, of the therapeutic section of the Congress. While conducting his duties as professor of materia medica and therapeutics, which he had held since 1890, he became president of the British Medical Association in 1909 when the meeting was held in Belfast, and was at different times president of the Irish Medical Schools and Graduates Association, of the Irish Medical Association, and of the Ulster Medical Society, while in 1910 he was elected to the General Medical Council as the representative of Queen's University, Belfast. At the deliberations of the Council he possessed the advantage, when educational matters were in question, of having been an examiner over a considerable range of years at four universities and at the Pharmaceutical Society of Ireland. He sat on the Council for six years during which time his advice, not only in the special branches of medicine which he had made his own, but upon all matters of training and discipline, was recognised as valuable. He kept his large range of information so clearly before him that it was always accessible. This was well displayed in the annual oration of the Medical Society of London delivered in 1913, in which he analysed the trend of thought in pharmacological research at a time of remarkable activity in the attempts to bring chemical and physiological knowledge to bear upon therapeutic action. He surveyed the whole realm of therapeutics practically up to the date of the delivery of the oration, pointing to the progress which already had been made while indicating the lines which that progress would probably follow.

In 1918 he became Member of Parliament for his University and in that assembly he sustained his reputation for wisdom and shrewdness. He took little active part in public affairs, but he was a colleague to whom other Members were glad to refer for advice. In his occasional interventions in debate he spoke clearly and to the point, both knowing his subject and what he wished to say on it. He also enjoyed personal popularity in the House. Honours and academic distinctions, as might be expected, flowed in on him. In 1902 he was knighted and was appointed hon. physician in Ireland to the King; he received honorary degrees from his own University, from the Universities of Glasgow and Dublin, from the Academia Fisico Chimica Italiano, and the University of Palermo.

Sir William Whitla married in 1876 Ada, daughter of Mr. George Bourne, of The Draconage, Stafford. She died recently and there were no children of the marriage. Sir William's brother, Dr. Meredith Whitla, still practises in Monaghan.

Prof. T. Sinclair, F.R.C.S., M.P. for Queen's University, and Emeritus Professor of Surgery writes as follows: "Other colleagues and pupils will no doubt testify to the many social, professional, and academic qualities of the late Sir William Whitla. I shall therefore confine myself to a brief account of his services as a Parliamentary representative of the University for five years—an office in which I had the honour to succeed him. Sir William had an impressive personality, a penetrating and far-seeing intellect. His entry into any company excited immediate interest and attention, and gave his opinion, when expressed in his earnest and thoughtful manner, much weight. In the Great Convention of Ireland (1917–1918), summoned to arrange details of the Home Rule scheme, his intervention helped to secure for the rights and privileges of his native Ulster due consideration, as well as for those of his Alma Mater which he loved so well. When, in 1908, the Irish Universities Act was drafted, abolishing the old Royal University of Ireland at the very zenith of its fame, and substituting the National University in Dublin and the Queen's University in Belfast, his watchfulness and sagacity were invaluable. At that time the late Mr. Augustine Birrell was Chief Secretary for Ireland, and could not be convinced of the extreme gravity of the change. Sir William endeavoured to get him to treat the matters that seemed so vital to us seriously. The deplorable results in the State of Ireland of partition we witness to-day, but Northern Ireland has endeavoured to make the best of its Queen's University. We are proud to think that success has attended our efforts. Queen's owes much to its distinguished alumnus, Sir William Whitla, who became one of her pro-chancellors and who, on passing from amongst us, has bequeathed his handsome residence and demesne as a residence for its vice-chancellors for all time. Truly a lasting memorial to one who has added prestige and distinction to his old university and native province, as well by his talents as by his munificent gifts."

Colonel A. B. Mitchell, D.L., F.R.C.S.I., Consulting Surgeon, Royal Victoria Hospital, writes: "It is doubtful if any medical man ever gained and maintained the confidence, trust, and affection of his patients in a higher degree than William Whitla. And when, in the midst of hospital work and exacting practice, he wrote his Materia Medica and Therapeutics, the value of his early training as a chemist was very evident. It was the first text-book to reproduce woodcuts of pestles and mortar, measure glasses, and other dispenser's tools. The book met the requirements of the dispensing chemist, the medical student, and the qualified medical man. The section on non-official remedies proved a special attraction. The book had an enormous sale. The twelfth edition, revised and edited by Dr. Gunn, of Oxford, happily reached Sir William about two months before his death. He displayed it to his friends with natural pride. An indefatigable worker, he next set out to write that remarkable book The Dictionary of Treatment. His versatility and the extent of his reading may be gauged from the fact that every article in the first edition was written by himself. The success of this work was immense. It was published simultaneously in England and America. The English edition of 8000 copies was sold out within nine months; 2000 copies of the American edition were imported into this country to meet the immediate demand. The book met a definite want and was soon to be found on the bookshelf of almost every general practitioner. A specially bound volume of the Chinese edition was amongst his most treasured possessions. Apart from his medical knowledge Sir William Whitla was a widely read and cultured man. His knowledge of English literature was amazing. He was one of the greatest living Shakespearian scholars. The annual visits of Sir Frank Benson and his company to Belfast were almost red letter days to him. Those who were privileged to participate in the delightful suppers which he gave to the leading members of that company can never forget the charming atmosphere of that hospitable table. Members of the British Medical Association will long remember his presidency on the occasion of the annual meeting in Belfast in 1909. His bounteous hospitality, brilliant garden party, and a presentation to each member who attended the meeting of his recently published book; a Dictionary of Medicine, are not easily forgotten. The Medical Institute, the home of the Ulster Medical Society, contains a bronze plate with the following inscription: 'This building was erected, equipped and presented to the Ulster Medical Society by Sir William Whitla, M.D.' The building was declared open in 1902; the cost had exceeded £6000, and when one tried to thank Whitla he replied: 'I owe it to the profession, they gave me the money for my book.'

"Sir William Whitla was a really great man with a strikingly picturesque mind. He was a wonderful raconteur, his stories were innumerable, and were recorded with a wealth of detail that made him a unique and fascinating companion. On the difficult problems connected with education he was a recognised authority and was an early advocate of the establishment of a University at Belfast. It was a fitting tribute that he should have been elected first representative of the Queen's University of Belfast in the Imperial Parliament and one of its pro-chancellors. He was a widely travelled man and his descriptions of Russia, Palestine, Italy, Canada, and America were an educational treat.

"A man of deep religious conviction, his Bible was his constant companion. The tale of his private benefactions will never be known, but no one in real distress ever applied to him in vain. For almost four years he had been unable to leave his room, but his mental powers and his memory remained almost perfect to the last. His devoted wife, Ada, Lady Whitla, predeceased him by 18 months. A great man, a very great man, has gone to his long rest; a rest which he earnestly desired and for which he patiently waited. He has not lived in vain."

Dr. W. W. D. Thomson, Professor of Medicine, Queen's University, Belfast, writes: "Fifty-two years ago William Whitla's name became well known to students of medicine through the publication of his Elements of Pharmacy, Materia Medica and Therapeutics, but the publication of the Dictionary of Treatment ten years later, in 1891, made his name a household one among medical practitioners, not only in the British Isles, but also in the colonies and United States. This book seemed exactly to meet the needs of the man in practice, who was enabled quickly to turn up the disease in question and find there well-tried methods of treatment and also carefully compiled prescriptions. At that period the therapeutic indices, the appointment books, &c., of the various drug houses had not come into common use, with their inviting array of proprietary mixtures and tablets; prescription writing was still an art which took long to acquire. To the younger men this book was a welcome assistant in their practice, and it rapidly became a 'best seller.' The writing of this book was begun during a period of comparative leisure, and some 500 pages were completed when increasing pressure of work forced its temporary abandonment. When a fresh opportunity arose, Whitla was discontented with what he had previously written and ordered his man to have the manuscript burnt. The furnace was out of action that day, however, and the manuscript put on a shelf and forgotten. It was not till some time later that the work, which had so nearly perished, was resumed and finished. At this period Whitla often worked 18 hours a day for long spells.

"As a lecturer and clinical teacher Sir William Whitla excelled by his skill of dramatic narrative, and drove home his points with some apt illustrations culled from his own vast clinical experience. As a clinician he had an uncanny knack, reminiscent of Sherlock Holmes, of fastening on some clue on which to build a diagnosis. His powers of observation taught many generations of medical students the value of close inspection in clinical work. He was a fierce opponent of narrow specialism, and he ever emphasised the close correlation of all the organs of the body when studying disease.

"His interests led him into other fields as well as medicine. Notable among these was his deep religious faith and interest in theology. He was a personal friend of the late General Booth, who stayed with him on his visits to Ulster. He interested himself in the subject of Biblical Prophecy. His last published work dealt with the Book of Daniel. I visited him on two occasions a month before his death. He sat in an armchair surrounded with books, and on the reading table before him an open volume of the Bible. The room, furnished as a study, looked out on a lawn, and on this Sir William fixed his gaze as he talked of bygone things. He had not been out of this room for four years, indeed he could scarcely move without assistance; and yet his brain was as alert as it had ever been, and he showed no signs of weakening or vexation at his afflictions. There is no doubt that he felt the loss of Lady Whitla, who died in April, 1932, very keenly."

IRVING HEWARD CAMERON,

F.R.C.S. Eng., Edin., Irel.

EMERITUS PROFESSOR OF SURGERY, TORONTO UNIVERSITY

We regret to learn of the death in Toronto of Prof. Irving Cameron, a veteran surgeon whose reputation had spread far from his Canadian home.

Irving Heward Cameron was the son of Sir Matthew Cameron, a former Chief Justice of Ontario; his mother was a Kentish woman, and his father a member of the Lochiel family. Irving Cameron was educated at Upper Canada College and the University of Toronto, and from the beginning of his professional career took a prominent part both in the clinical and scientific sides of his profession. He early became assistant to the professor of surgery in the University, and succeeded to the chair while still a young man. He became prominent in the organisation of the Canadian Medical Association and in the local branch of the British Medical Association, serving as president to both bodies. He contributed to many medical publications, and was one of the founders of the *Canadian Journal of Medical Science* which he afterwards edited, and in which he wrote largely on general surgical topics, and especially on the surgery of tuberculosis. He became one of the best known Canadian figures at international gatherings, for he was a fluent and pertinent speaker, widely informed along many professional lines. His reputation was acknowledged by his election in 1900 as hon. F.R.C.S. England, while he became also an honorary Fellow of the Edinburgh and Irish Colleges of Surgeons, and of the American College of Surgeons. From the University of Edinburgh he received the LL.D.

Prof. Irving Cameron was twice married, his first wife being Elizabeth, daughter of Dr. H. H. Wright, and his second wife the widow of John Ross Robertson, the well-known Toronto journalist and philanthropist.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdr. (D.) P. G. Richards is placed on the retd. list with rank of Surg. Comdr. (D).

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. T. A. Brand to be Surg. Lt.-Comdr.

Surg. Lt. (D) F. D. Manners to be Surg. Lt.-Comdr. (D).

ROYAL ARMY MEDICAL CORPS

Lt. (temp. commn.) P. O'Shea to be Lt. (on prob.).

ARMY RESERVE OF OFFICERS

Lt.-Col. P. G. Easton, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY

Capt. J. R. Griffiths resigns his commn. and retains his rank, with permission to wear the prescribed uniform.

Lts. H. V. Ingram and T. F. Arnott to be Capts.

Lt. G. D. Kersley, from T.A. Res. of Off. (R.A.M.C.), to be Lt.

Bernhard Baron Trust.—Grants to hospitals and charities aggregating £37,000 have been made from the trust created by the late Mr. Bernhard Baron. London hospitals have received £15,700, and provincial hospitals £7465. The total sum that has been distributed now reaches £221,900.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Unemployment Bill

IN the House of Commons on Dec. 15th the amended financial resolution in connexion with the Unemployment Bill giving effect to the Government's concession in respect of the relief given to distressed areas was agreed to in Committee by 184 votes to 35.

Road Traffic (Emergency Treatment) Bill

In the Committee stage of this Bill in the House of Lords on Dec. 14th Lord SANDHURST moved an amendment to extend its provisions to all vehicles, whether motor or not. Lord MOYNIHAN said it was generally recognised that before the advent of the motor vehicle accidents on the roads were few in number, scattered, and comparatively trivial. Accidents were now frequent, a large mortality resulted from them, and they were very often concentrated in certain districts to such an extent as to give rise to resentment on the part of the medical profession at the unfairness of receiving no remuneration. The amendment was negatived by 38 votes to 4. — Earl HOWE moved an amendment to substitute the vehicle licensing authority for the owner of the motor-car as the party from whom medical practitioners and hospitals should be entitled to recover remuneration for emergency treatment. The roads were used by the whole community and the burden of this charge ought to be borne by the whole community.—Lord PONSONBY agreed that the injustice to the motorist would be removed if the grant were made from the Exchequer.—Lord MOYNIHAN said that if the money were raised from compulsory insurance the amount required from each individual motorist would amount to only a penny per month—no hardship on anyone now using the road.—The Earl of PLYMOUTH said the Government were considering the whole question of road accidents and the subject matter of this Bill would be included in that review. He could not express a preference for one form of remedy over another. The amendment was withdrawn.—Lord MOYNIHAN moved an amendment providing that applications should be made only in cases where full payment for treatment rendered had not previously been received. This was agreed to.

In the House of Lords on Tuesday, Dec. 19th, the Road Traffic (Emergency Treatment) Bill was read the third time and passed.

HOUSE OF COMMONS

WEDNESDAY, DEC. 13TH

Jewish Doctors in Palestine

Mr. WEDGWOOD asked the Secretary of State for the Colonies whether his attention had been drawn to the fact that the Palestine Government was considering a restriction on the number of Jews who might become doctors in Palestine; and if this restriction had received the approval of His Majesty's Government.—Sir P. CUNLIFFE-LISTER replied: I have not received any information from the Government of Palestine that such a restriction is contemplated.

Alleged Wrongful Removal to Mental Hospital

Sir WILLIAM DAVISON asked the Minister of Health whether his attention had been called to the forcible removal to a lunatic asylum of a sane woman from her home in Bedford Park, West London, by servants of the Middlesex County Council, who refused to verify her statement that her name was not that of the person they stated they had been ordered to remove; and whether he would set up a committee to inquire into the whole question of the removal and detention of persons alleged to be insane, and to make recommendations with a view to preventing such mistakes in future.

Mr. MCENTEE asked the Minister of Health whether his attention had been called to the case of Mrs. Broad, who was forcibly removed from her home and confined in a mental hospital and was afterwards found to have been mistaken for another person living at a different address; and, in view of the public concern at the possibility of persons being removed and detained in such institutions to-day, if he would set up a public tribunal to inquire into the existing regulations and to suggest such new safeguards as would prevent any arrest and detention of sane persons in future.—Mr. SHAKESPEARE replied: The occurrence has been reported to my right hon. friend by the Middlesex County Council, who are the authority primarily responsible in the matter. The whole circumstances are being investigated by the council and the result of the investigation will be reported to him without delay. My right hon. friend must consider this report before he decides what action on his part is desirable.

Sir W. DAVISON: Can my hon. friend say whether it is a fact that no written particulars were given to the officers of the Middlesex County Council who were instructed as to the removal of this patient, and that they were instructed by telephone; and will he suggest to the Middlesex County Council, or whoever is the authority, that it is very undesirable that matters of great importance of this kind should be ordered by telephone without written instructions: and, indeed, whether it would not be possible for the officer certifying a person as mentally deficient to be present so as to identify the patient?

Mr. SHAKESPEARE: As I stated in the answer the precise facts are under inquiry, but I think I can say that if the facts as represented in the press are true after due inquiry has been held the whole House will desire to join my right hon. friend in expressing deep concern and regret that an incident of such a grave nature should have taken place.

Insurance of Young Children

Sir ARNOLD WILSON asked the Chancellor of the Exchequer whether, and if so when, it was intended to introduce legislation to give effect to the recommendation made in the report of the Committee on Industrial Assurance and Assurance on the Lives of Children under Ten Years of Age [Cmd. 4376].—Mr. HORE-BELISHA (Financial Secretary to the Treasury) replied: I am not yet in a position to say when action will be taken on this report.

THURSDAY, DEC. 14TH

Children in Receipt of Dependants' Benefit

Mr. DAGGAR asked the Minister of Labour the number of children in receipt of dependants' benefit from the unemployment insurance fund for the years 1930, 1931, 1932, and 1933 to date.—Sir HENRY BETTERTON replied: The only dates in the period named, for which separate figures are available showing the number of children in respect of whom dependants' benefit was authorised on applications for insurance benefit are Feb. 2nd, 1931, and Nov. 28th, 1932, when it is estimated that the numbers were approximately 1,194,000 and 847,000 respectively. These figures are not, however, strictly comparable in view of the changes in the conditions for the receipt of insurance benefit introduced in November, 1931.

Fatal Operation for Sterilisation

Mr. POTTER asked the Home Secretary if a recent inquest on a woman who died after an operation for sterilisation had been brought to his attention; and if he would give instructions that a record of any such happenings should be kept in the Home Office.—Sir J. GILMOUR replied: I have seen a newspaper report of the inquest in this case. I have no means of securing a record of such occurrences unless death results in circumstances which require a report to be made to the coroner; and I do not think that any public interest would be served by my asking coroners to tabulate separately such cases as may be reported to them.

Mr. POTTER asked the Minister of Health if his attention had been drawn to a recent inquest on a woman after an operation for sterilisation; and if he would take steps to obtain statistics of the frequency with which such operations were performed in hospitals subject to his inspection. —Sir HILTON YOUNG replied: Yes, Sir, I have seen a newspaper report on the inquest referred to, in which the verdict recorded that sterilisation had been medically advised owing to the physical incapacity of the patient to withstand the risks she would incur in undergoing confinement. I do not think it would be useful to attempt to collect statistics of such cases.

Slum Clearance in Shoreditch

Mr. SUMMERSBY asked the Minister of Health when the actual work in connexion with slum clearance in Shoreditch would be started; how many new homes would be supplied; and what rents would be charged.—Sir HILTON YOUNG replied: I am about to confirm an Order made by the London County Council under the Act of 1930 for the compulsory purchase of the Drysdale-street area. The council have already agreed terms for the purchase of some of the properties in the area and preparatory work on a rehousing site has been begun. In connexion with this and other clearances to be undertaken in Shoreditch the borough council will provide rehousing accommodation for 400 persons and the county council about 2000 new dwellings. The weekly rents, which must comply with the statute, will, it is understood, be from 6*s.* upwards, exclusive of rates, according to the number of rooms, the type, and the location of the dwellings. The Ware-street area in this borough is being cleared under legislation preceding the Act of 1930. The rehousing accommodation for this area is on the point of completion.

Medical Treatment: Voluntary Schemes

Mr. JOEL asked the Minister of Health whether his attention had been called to a scheme in the Black Country under which the poorer residents of the middle-class who had just escaped coming under national health insurance were arranging a system of medical attendance by weekly payments whether well or ill; and whether he would investigate the possibilities of such a scheme with the object of assisting its extension in other districts.—Sir HILTON YOUNG replied: My attention has not been called to the particular scheme referred to, but I am aware that in certain parts of the country the medical profession have organised public medical service schemes for the medical treatment of persons for whom provision is not made under the National Health Insurance Acts. Such schemes, however, are matters of voluntary arrangement, and I have no power to take steps with a view to their extension.

Pasteurisation of Milk

Brig.-General CLIFTON BROWN asked the Minister of Health whether his attention had been drawn to the report of the Milk Commission as to the condition of some of the smaller pasteurisation plants in the country; whether these plants were periodically inspected; and what steps he was taking to see that safe milk was produced by the pasteurisation processes in use.—Sir HILTON YOUNG replied: I am aware of the remarks in the report respecting pasteurisation. Under the law there is no control of the process except in the case of milk which is sold under licence as "pasteurised milk." Establishments so licensed are subject to inspection by the officers of the local authority granting the licence, and it is one of the conditions for a licence that the type of apparatus and the methods employed shall be satisfactory to the authority. An officer of my department is making general inquiries into the efficiency of plants and I propose to issue a memorandum for the guidance of local authorities and their officers in their inspection of such plants.

Sir FRANCIS FREMANTLE: Will my right hon. friend include in his memorandum a suggestion that the veterinary surgeons to be appointed should include this as part of their training and responsibilities so as to have only one inspector instead of two?

Sir HILTON YOUNG: I shall be happy to consider my hon. friend's suggestion.

Disposal of Surplus Milk

Sir PERCY HURD asked the Minister of Agriculture whether, in view of the expected surplus of liquid milk in the spring, he would take steps to make part of this surplus available for schools and welfare centres instead of allowing it to endanger the success of the milk-marketing scheme by passing milk into manufacture at prices unremunerative to the producer.—Mr. ELLIOT replied: As my hon. friend will be aware, the National Milk Publicity Council already does much useful work in the direction of extending the consumption of milk in schools. I am not clear what further steps my hon. friend has in mind.

Sir P. HURD: Has the right hon. gentleman a fund which would assist a further extension of this excellent method?

Mr. ELLIOT: I am afraid that I have no fund.

Mr. RHYS DAVIES: Will the right hon. gentleman get in touch with the Board of Education so that if there is a surplus, local education authorities may get hold of this milk and give it to the children in the schools?

MONDAY, DEC. 18TH

Leave of Indian Medical Officers and Nurses

Sir FRANCIS FREMANTLE asked the Secretary of State for India: (1) for what reason privilege leave out of India to all medical officers and nurses in military employment had been stopped except on urgent compassionate grounds; and whether any such restriction had been placed on any other branches; and (2) for what reason the combined leave already granted to certain medical officers in India was being held in abeyance without reasons being given.—Sir S. HOARE replied: I have received no information to the effect that leave has been stopped, but will make inquiries if my hon. friend wishes.

Maternal Mortality in India

Miss RATHBONE asked the Secretary of State for India whether, in view of the fact that the number of deaths in childbirths in India was estimated by Sir John Megan, late surgeon-general for India, as 200,000 per annum, he would request the Government of India to set up a commission to inquire into the reason for and methods of reducing this maternal mortality.—Sir S. HOARE replied: The hon. Member's suggestion will be communicated to the Government of India.

Furunculosis

Captain CUNNINGHAM-REID asked the Minister of Agriculture if he had accepted the recommendations contained in the second interim report of the Furunculosis Committee; and whether it was proposed to introduce legislation to give effect to the recommendations of the committee.—Mr. ELLIOT replied: I hope it will be possible to introduce a Disease of Fish Bill this session to deal with the recommendations of the report which require legislation; and other recommendations are under consideration.

Water-supplies

Mr. LEVY asked the Minister of Health how many regional committees had been formed to deal with water-supply; what areas they covered respectively; and what they had accomplished.—Mr. SHAKESPEARE replied: Six regional committees have been formed covering the areas: South-West Lancashire (22 authorities), West Riding of Yorkshire (142 authorities), Sherwood Area of Nottinghamshire (22 authorities), Isle of Wight (11 authorities), Holland, Lincolnshire (12 authorities), and South Buckinghamshire (6 authorities). The Sherwood Area Committee has issued its report, including an agreed plan for the allocation of the water resources. The other committees are engaged in surveying needs and resources and formulating plans for future supplies. Measures have been taken for the appointment at an early date of two additional regional committees covering large areas.

Special Treatment for Deaf Girl

Captain SOTHERON-ESTCOURT asked the Parliamentary Secretary to the Board of Education whether his attention had been called to the detention in a Leeds institution of Ina Draper, aged 11, of Ferrybridge, Yorkshire; why it was thought necessary to take away the girl direct from the school where she was being instructed instead of from her home; and whether the cost of this special treatment was borne by the education authorities or by the parent, who had had no voice in the educational arrangements made for his daughter.—Mr. RAMSBOTHAM replied: I have made inquiries into this case. This girl was found, after repeated medical examinations, confirmed by the head teacher of the elementary school she was attending, to be too deaf to be taught in a class of hearing children in an elementary school. As the father refused to allow her to be sent to a special school for the deaf, the West Riding Education Authority obtained an Order from the Court committing her to the care of Mr. Andrews, head teacher of the Blenheim Residential Deaf School at Leeds, this being the nearest available special school. The father repeatedly refused to obey this Order, and the local education authority, therefore, considered the most effective way of enforcing it to be for Mr. Andrews to assume the custody of the child at the school which she attended. She was accordingly taken to the Leeds school on Sept. 22nd, 1933. The cost of her attendance at the Leeds school is being borne by the West Riding Education Authority, under Section 65 of the Education Act, 1921. The parent is liable to contribute such weekly sum, if any, as may be agreed on between him and the local government authority. The question of a contribution by the parent is now under consideration by the authority.

Nutrition of School-children

Mr. DUNCAN asked the Parliamentary Secretary to the Board of Education the conclusion reached as a result of an inquiry into the nutrition of school-children made by the London County Council recently.—Mr. RAMSBOTHAM replied: My noble friend understands that 1281 children in the 10-year old age-group were examined, the schools selected being mainly in poor areas. Of these children 93·5 per cent. were found to be well nourished and 6·5 per cent. poorly nourished. Only two children were grossly ill nourished. The poorly nourished children were not found to be principally the children of the poorest parents; in fact the percentage of poorly nourished children of parents in full-time employment was found to be higher than the average for the whole group. In view of the prolonged economic depression, the result of the inquiry is regarded by the L.C.C. as very reassuring.

TUESDAY, DEC. 19TH

Osteopathy

Sir WILLIAM DAVISON asked the Minister of Health whether his attention had been called to the increase in the practice of osteopathy in this country; and whether he would institute an inquiry into the principles and practice of osteopathy, with a view to the protection of the public from treatment by untrained practitioners.—Mr. SHAKESPEARE replied: My right hon. friend has considered this matter, but, as indicated in the reply given on Nov. 30th, he does not think that an inquiry on the lines suggested would serve any public interest.

Sir W. DAVISON: Does my hon. friend not realise the danger to the public in having unqualified practitioners practising this skilful art, and does he not think it desirable that these gentlemen should form their own college and give their own certificates to people whom they consider qualified to act? (Hear, hear.)

Mr. SHAKESPEARE: I do not know that any more harm is being done to the public by allowing the practice of osteopathy than there is by allowing the practice of unqualified medical practitioners. That is at present the position of the law.

MEDICAL NEWS

University of Oxford

At a congregation held on Dec. 16th the degree of doctor of medicine was conferred on W. H. McMenemey, and the degrees of B.M. & B.Ch. on those whose names we gave last week (p. 1400) as passing the examination.

The Philip Walker studentship in pathology, of an annual value of £200, is offered to a student who will devote his time to original pathological research. Particulars may be found in our advertisement columns.

University of London

At recent examinations the following candidates were successful:—

THIRD EXAMINATION FOR M.B., B.S.

Honours.—E. G. L. Bywaters (*b*), [illegible] thy J. Healey (*a*, *e*), Roy. Free Hosp.; [illegible] don Hosp.; A. K. Price (*d*), St. Thom [illegible] vist (*d*, *e*, *university medal*), Univ. Coll. H [illegible] (*e*), London Hosp.

(*a*) distinguished in medicine, (*b*) distinguished in pathology, (*d*) distinguished in surgery, (*e*) distinguished in obstetrics and gynæcology.

Pass.—Herbert Agar, Univ. of Leeds; D. A. Andersen, Univ. Coll. Hosp.; H. G. E. Arthure, Charing Cross Hosp.; Arthur Barber, St. Bart.'s Hosp.; Jessie G. Belilios, King's Coll. Hosp.; L. J. Bevnon, St. George's Hosp.; M. L. Bynoe and G. T. W. Cashell, King's Coll. Hosp.; R. F. M. Child, St. Mary's Hosp.; R. H. P. Clark, London Hosp.; R. D. Clay, King's Coll. Hosp.; C. P. Collins, Univ. Coll. Hosp.; *Dorothy C. J. Cookson*, Roy. Free Hosp.; D. R. Crabb, St. Bart.'s Hosp.; S. W. Croome, King's Coll. Hosp.; J. R. Crumbie, St. Bart.'s Hosp.; Hilda M. S. Davidson, King's Coll. Hosp.; D. O. Davies, St. Bart.'s Hosp.; E. J. Dennison, St. Thomas's Hosp.; Anastasio D'Souza and G. E. Dunkerley, Univ. Coll. Hosp.; Mary Evans, King's Coll. Hosp.; S. T. Falla, London Hosp.; H. F. M. Finzel, Univ. of Bristol; H. C. Fletcher-Jones, Westminster Hosp.; T. A. Gavin, Guy's Hosp.; W. F. T. George, St. Bart.'s Hosp.; G. H. Gibbens and R. G. B. Gilbert, St. Thomas's Hosp.; Vladimir Glass and Harris Goldfarb, Univ. Coll. Hosp.; Nora J. Gould and Phyllis N. Greene, Roy. Free Hosp.; G. J. Griffiths, Westminster Hosp.; John Grocott, Guy's Hosp.; H. W. Hall, Univ. Coll. Hosp.; H. A. R. Hamilton and E. H. C. Harper, St. Thomas's Hosp.; R. V. Harris, St. Bart.'s Hosp.; John Howkins, Middlesex Hosp.; W. A. Hyslop, London Hosp.; Maisie F. James and Elsie E. Johnson, Roy. Free Hosp.; W. B. Johnston, St. Mary's Hosp.; A. B. King, Univ. Coll. Hosp.; Herbert Kirman, King's Coll. Hosp.; Janet Y. Laidlaw, Roy. Free Hosp.; R. A. Q. Lay, Guy's Hosp.; Maurice Lee, St. Thomas's Hosp.; J. T. R. Lewis, Middlesex Hosp.; R. I. Lewis, London Hosp.; R. G. Macfarlane, St. Bart.'s Hosp.; Catherine B. Mackinlay, King's Coll. Hosp.; J. D. Macleod, St. Thomas's Hosp.; G. W. May, London Hosp.; R. J. G. Morrison, St. Bart.'s Hosp.; Irene P. Murray, King's Coll. Hosp.; *T. S. Nicol, Charing Cross Hosp.*; *H. E. S. Pearson*, St. Thomas's Hosp.; E. S. Pope, St. Bart.'s Hosp.; F. W. Roberts, Middlesex Hosp.; J. B. Robinson, Guy's Hosp.; Christine M. Rooke, Mary Scouloudi, and Maxime Shun-Shin, Univ. Coll. Hosp.; S. F. Smith, St. Thomas's Hosp.; Cicely Steer, Roy. Free Hosp.; G. H. Stuart and S. C. Suggit, Univ. Coll. Hosp.; Ian Taylor and W. N. P. Wakeley, King's Coll. Hosp.; Violet H. Whapham, Roy. Free Hosp.; P. R. Wheatley, Guy's Hosp.; J. C. Wintcler, *King's Coll. Hosp.*; and R. B. D. Wright, St. Mary's Hosp.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Mary A. C. Adams, Roy. Free Hosp.; E. R. Bennion, Westminster Hosp.; Jean W. D. Calman, Univ. Coll. Hosp.; P. E. Dipple, St. Bart.'s Hosp.; R. J. K. Fleming, London Hosp.; J. M. Flower, Westminster Hosp.; J. C. Harvey, St. George's Hosp.; Alice M. Head, Roy. Free Hosp.; Alice M. Kaye, King's Coll. Hosp.; Gwendoline D. Knight, Roy. Free Hosp.; H. B. Lee, St. Bart.'s Hosp.; A. R. V. Patel, Guy's Hosp.; Geoffrey Phipps, St. Thomas's Hosp.; Silvia W. Pyddoke, Roy. Free Hosp.; V. B. Reckitt, Guy's Hosp.; Margaret H. Scott, Roy. Free Hosp.; Ralph Shackman, St. Bart.'s Hosp.; M. G. Stratford, Univ. Coll. Hosp.; B. A. Thomas, St. Bart.'s Hosp.; and *Fanny D. Wride*, *Roy. Free* Hosp.

Group II.—R. M. H. Anning, St. Mary's Hosp.; T. A. Baldwin and V. H. Barnett, Univ. Coll. Hosp.; Mary A. M. Bigby, Roy. Free Hosp.; C. F. R. Briggs, Univ. Coll. Hosp.; E. N. Brockway, St. Thomas's Hosp.; R. H. Carpenter, St. Bart.'s Hosp.; B. S. Cart[illegible]; J. A. Chivers, St. Bart.'s Hosp.; C. F. [illegible] Hosp.; O. G. Edholm, St. *George's H*[illegible] *ondon Hosp.*; S. T. Hayward and H. C. Hugh, St. Bart.'s Hosp.; Elizabeth M. James, Roy. Free Hosp.; N. K. Kai, Univ. Coll. Hosp.; F. R. Kilpatrick and J. A. W. Miller, Guy's Hosp.; P. H. Nankivell, Middlesex Hosp.; H. E. Offord, St. George's Hosp.; Doris E. Oxford, Roy. Free Hosp.; R. B. Peckham, Guy's Hosp.; *Eric Pereira, St. George's Hosp.*; *Harold Royle* and B. F. B. Russell, St. Bart.'s Hosp.; J. V. Shemilt, St. Thomas's Hosp.; G. J. Sophian, St. Bart.'s Hosp.; W. P. Stamm, Guy's Hosp.; T. P. Thamotheram, Ceylon Med. Coll. and King's Coll. Hosp.; A. S. Thorley, Univ. Coll. Hosp.; G. L. Timms, St. Thomas's Hosp.; and Kathleen M. Webster, Roy. Free Hosp.

University of Birmingham

At a congregation held on Dec. 15th the following degrees and diplomas were conferred:—

M.B., Ch.B.—M. I. Ghattas, Joan F. M. E. Lamplugh, F. W. H. McMurdo, Bertha Marston, and Kenneth Watson-Jones.

L.D.S.—E. B. Cheflins, C. L. Dawson, A. P. Eaton, M. J. Middleweek, John Osborne, and J. C. Price.

Royal College of Surgeons of England

A meeting of the council was held on Dec. 14th with Sir Holburt Waring, the president, in the chair. A resolution of condolence was passed on the death of Mr. R. P. Rowlands, a member of the council, and formerly a vice-president of the college.

The following were admitted to the Fellowship:—

Arthur Conner Lysaght, L.R.C.P.; Geoffrey John Orlando Bridgeman, M.B. Camb.; Eric John Greenwood, M.B. Camb.; George Spencer Ferraby, M.B. Lond.; Noel Theodore Hannaford Schafer, M.B. Melb.; Muriel Sydney Hulke, M.B. Lond.; Patrick Herbert Lyon Playfair, L.R.C.P.; Albert Saverymuttu Rajasingham, L.R.C.P.; Jack Albert White, M.B. Lond.; Emlyn Evans Lewis, L.R.C.P.; Anthony Harvard Baker, M.B. Manch.; Gordon Nuttall Bailey, L.R.C.P.; Francis Harry Hume Finlaison, L.R.C.P.; Karsonlal Keshavlal Dalal, M.B. Bombay; Victor Horsley Riddell, L.R.C.P.; Herbert Edward Harding, L.R.C.P.; Richard John Vulliamy Battle, L.R.C.P.; Lewis Philip Jameson Evans, L.R.C.P.; David Lincoln Lewis, L.R.C.P.; Willie McNeill Niblock, M.B. Camb.; Theodore Schrire, M.B. Cape Town; John Hugh Bruce Beal, B.M. Oxf.; Gilbert Washington Causey, M.B. Liverp.; Barton Gilbert, M.B. Lond.; Charles Laurence Heanley, L.R.C.P.; Mir Naeem Mahmood, M.B. Punjab; Robert Wallace Nevin, M.B. Camb.; Roland Barnes, M.B. Manch.; Edward Stanley Lee, M.B. Lond.; Walter Gordon Campbell, M.B. St. Andrews; Thomas Lightbody Chapman, M.B. Glasg.; George Norman Clark, M.B. Aberdeen; Frederick Plimmer Furkert, M.B. N.Z.; Andrew Dorset Harper, M.B. Liverp.; Bryan Tobyn Keon-Cohen, M.B. Melb.; George Edward Larks, M.B. Sheff.; Geoffrey James Lillie, M.B. Melb.; Norman John Logie, M.B. Aberdeen; Cecil Patrick Malley, M.B. Dub.; Kekoo Muncherji Masani, M.B. Bombay; Mortimer Philip Reddington, M.B. N.Z.; and Raymond Victor Rickard, M.B. Sydney.

Diplomas of Membership were granted to H. V. Corbett (Liverpool), J. F. Galloway (Liverpool), and A. V. House (Bristol).

At the Primary Examination for the Fellowship held recently, 181 candidates presented themselves, of whom 66 were approved and 115 were rejected. The following are the names and medical schools of the successful candidates:—

A. E. Alcock, M.B. Melb., Univ. Coll.; G. H. Baines, Camb. and St. Thos.; A. H. Barber, M.B. Birm.; J. R. Blackburne, M.R.C.S., St. Bart.'s; E. J. J. Borges, M.B. Bombay, Middlesex; J. M. Brown, Guy's; G. H. L. Bullmore, Oxford; J. E. Cates, St. Bart.'s; N. Chakravarty, M.R.C.S., Calcutta and St. Bart.'s; A. K. Colley, M.D. Toronto; W. S. Creer, M.R.C.S., Liverpool; C. H. C. Dent, Camb. and London; A. de Quadros, M.B. Bombay, London; A. E. De Sa, M.B. Bombay, Middlesex; F. S. A. Doran, Camb. and Manchester; T. J. Fairbank, Camb.; G. A. Fairlie-Clarke, St. Bart.'s; M. Fallon, M.B. Dub.; Doreen J. Forrester, M.B. Edin., Univ. Coll.; N. Garber, M.B. Wits'rand, Middlesex; W. H. Gordon, M.B. Glasg., St. Bart.'s; T. A. Green, M.B. N.Z., Univ. Coll.; J. V. Guinane, M.B. Sydney; V. P. Gupta, M.B. Lucknow, Univ. Coll.; G. K. Harrison, M.D. Toronto; A. H. Harvie, M.B. N.Z., Univ. Coll.; B. B. Hickey, Oxford and London; G. M. Housden, M.B. Lond., Guy's and Middlesex; W. R. S. Hutchinson, M.R.C.S., Camb. and St. Thos.; J. G. H. Ince, M.R.C.S., Univ. Coll.; R. A. Jamieson, Edin. and Middlesex; S. A. Jenkins, Cardiff; M. N. Khanna, M.B. Punjab, Middlesex; R. C. Laird, M.D. Toronto, Middlesex; C. R. Lambert, M.B. N.Z., Univ. Coll.; W. McGrath, M.B. Sydney, Middlesex; H. C. Maclaren, Camb.; J. A. McLauchlan, M.B. Edin.; F. de S. Malone, M.B. Belf., Middlesex; S. Marinker, Middlesex; C. E. P. Markby, M.R.C.S., Camb. and St. Thos.; N. A. Miller, M.R.C.S., St. Thos.; M. D. Minhas, M.B. Punjab., Guy's; S. C. Misra, M.R.C.S., Lucknow and St. Bart.'s; A. Nimalasuria, Ceylon and King's Coll.; R. M. Rawle, M.B. Sydney, Middlesex; R. G. Reid, M.B. Lond., Guy's; I. F. Rose, Oxford; E. A. Rowlands, M.B. Melb., Univ. Coll.; C. R. Salsbury, M.D. Kingston; E. Samuel, Middlesex; J. Schorstein, M.D. Vienna, Univ. Coll.; G. S. Seed, M.R.C.S., Leeds; Ruby G. Sharp, M.B. Cape, Univ. Coll.; Dorothy A. Sharpe, M.R.C.S., Lond. Sch. Med. for Women; P. P. Sheth, M.R.C.S., Bombay and Middlesex; W. H. M. Smith, M.B. Edin., Middlesex; N. J. Solomon, M.B. Melb., Middlesex; J. B. Sugden, M.B. Lond., Leeds; N. J. Townsley, M.B. Belf., Middlesex; E. B. H. Trehair, M.B. Wits'rand, Univ. Coll.; D. M. Wallace, Univ. Coll.; J. Wasserzweig, M.R.C.S., London; A. D. Willis, Guy's; C. B. I. Willey, Oxford and St. Bart.'s; G. Wynn-Williams, King's Coll.

Licences in dental surgery were granted to the following:—

H. W. Abson, H. R. P. Annett, Gordon Ashcroft, A. G. Bagshaw, G. C. Baird, R. O. Borgars, J. D. Brodie, S. C. Burgess, E. O. Clough, H. L. P. Coetzer, F. I. S. Copley, K. H. Conton, A. C. Davies, Beryl M. Davies, S. J. Davies, M.R.C.S., W. V. A. Denney, W. G. C. Dimock, N. S. D. Evans, N. H. Everett, J. H. G. Fensom, Edward Ferguson, H. D. Firth, E. R. D. Fraser, E. J. Freeman, J. A. Gaudin, David Gent, N. E. Gillham, A. R. Gillies, N. H. Gittins, J. V. Goldie, Albert Gorton, C. I. Hagger, W. W. Hargreaves, N. G. Harrison, L. B. Holmes, R. V. Hooper, R. D. R. Hopkinson, C. H. James, E. C. Jenet, G. V. Ledger, J. M. McGarigle, N. E. Miles, J. I. H. Morris, Mary C. Morrison, E. H. Musgrove, C. G. O. Nevard, Jack Nicolls, W. E. H. Oakley, Clifford Parmee, W. B. Priest, Alvin Pryor, J. E. Read, Arthur Ritson, D. H. T. M. Robertson-Ritchie, J. E. C. Robinson, P. A. Roche, G. J. Rubie, J. C. Smith, K. A. Smith, Ella L. B. Stamper, W. E. Starkey, J. A. G. Starnes, Albert State, Frank Stevens, E. V. Stone-Wigg, F. E. A. Taylor, C. V. F. Thomas, J. H. Thompson, S. N. Tinkler, Frank Townend, R. A. C. Turton, Harry Varney-Burch, H. F. Vere, and I. E. W. Whitling.

Mr. Ernest W. Hey Groves was re-elected a member of the court of examiners. Mr. G. Gordon-Taylor was elected examiner in anatomy and Dr. G. A. Buckmaster examiner in physiology, for a primary examination for the fellowship to be held at Melbourne in November, 1934, and at Dunedin in December, 1934.

The council considered the resolution which was carried at the annual meeting of fellows and members on Nov. 16th: "That this 44th annual meeting of Fellows and Members of the Royal College of Surgeons of England reaffirms that members, who constitute 90 per cent. of the College, should have some representation on the Council, a similar resolution having been passed 43 times and never once lost." The following reply to the resolution was adopted: "The Council, having considered the report of the proceedings at the annual meeting of Fellows and Members on Nov. 16th, is not prepared to reopen the question of altering the constitution of the College."

University of Manchester

At recent examinations the following were successful:—

FINAL EXAMINATION FOR M.B., CH.B.

W. E. Bowden, P. V. Cant, H. W. Clegg, S. A. Cohen, F. T. Dodd, James Holme, R. S. Hynd, Harry Marshall, Helen E. Rogerson, and T. P. Sewell.

Part I.—John Boardman, E. G. Dryburgh, R. E. Hirson, Eileen M. Hughes, T. S. B. Kelly, H. D. B. North, Ralph Spencer, John Starkie, and Marjorie Swain.

University of Edinburgh

On Dec. 15th the following degrees and diplomas were conferred:—

M.D.—D. S. Cherry, *W. S. M'R. Craig, E. J. C. Hewitt, Pauline Klenerman, ***John M'Michael, Moray Melvin, J. D. W. Pearce, *R. B. Phillips, H. R. Stubbins, and **W. A. R. Thomson.

*** Awarded gold medal for thesis.

** Highly commended. * Commended.

M.B., Ch.B.—C. C. Barker, J. G. Bate, R. D. Bell, W. T. Black, R. T. Bokwe, E. D. Caldwell (in absentia), J. L. Carmichael, Robert Carmichael, A. H. C. Carter, C. T. C. Chia, H. M. Clark, Hyman Cohen, W. H. Derham, N. V. M. Dodds, J. A. Falconer, L. L. Freeman, H. G. Gibson, H. C. Hingst, C. L. Joseph, E. D. T. Lewis, R. S. B. M'Clean, S. K. Mangal, G. E. Menzies, Hymie Meyers, R. W. Morrison, T. D. Paton, G. R. Pile, T. F. Quin, D. A. H. Robson, C. S. Sandeman, Louis Schapiro, Joseph Stark, D. V. Summers, P. W. Tait, Peter Taylor, George Watt, Katharine H. Welsh, J. W. O. Will, and C. M. Wilson.

University of Dublin

At recent examinations in the School of Physic, Trinity College, the following candidates were successful:—

M.CH.

F. W. G. Smith.

FINAL EXAMINATION FOR M.B., B.CH., AND B.A.O.

Medicine.—Kevin O'Toole, Helena G. G. Bennett, J. A. McIlveen, Alice V. Cunningham, R. H. Simon, S. G. O'Neill, Marion A. G. Kennedy, Eva E. Moore, W. N. Whiteside, P. B. Hafner, S. M. Freedman, W. A. Clarke, G. N. Taylor, E. G. Ashton, and Sheila K. Henderson.

Surgery.—D. S. Torrens, P. G. Daly, I. T. F. Wiley, G. S. S. Harty, D. T. Annesley, G. C. V. O'Driscoll, E. G. Ashton, S. H. R. Price, S. G. O'Neill, W. H. E. McKee, Emanuel Howitt, J. A. Mallie, E. S. A. Ashe, A. W. Callaghan, Norman Jackson, J. J. Martin, Mary J. Ahern, Marion A. G. Kennedy, and E. G. Graham.

Midwifery.—A. C. Pilkington, Nathan Weinstein, H. D. McGorry, and D. S. Quill (passed on high marks); D. J. Bradley, P. St. G. Robinson, F. P. E. Smith, I. A. Walsh, H. L. Connor, T. A. Cunningham, J. F. Harbinson, Patrick O'Brien, R. C. Tyner, George Hannigan, P. A. McNally, H. F. T. Deane, W. G. B. Halliden, E. B. McEntee, Doris E. Morton, C. O. Greer, A. F. J. Delany, D. J. O'Shaughnessy, J. J. Martin, Charlotte F. Pike, H. S. J. van Niekerk, and C. M. T. Adamson.

D.P.H.

Part II.—R. P. Pollard.

D.P.M.

Part II.—O. W. S. FitzGerald.

B.DENT.SC.

D. G. Walker and L. W. McCaughey.

Post-graduate Courses in Berlin

International post-graduate courses are to be held in Berlin on the following subjects: internal medicine (March 11th to 17th), radiology (March to April), surgery (April 9th to 14th), malignant tumours (March to April), and the biology of heredity (April 23rd to 28th). Monthly courses in all the special departments, including practical work, will also be held. Particulars of all these courses may be had from the information bureau of the Kaiserin Friedrich-Haus, Robert Koch-platz 7, Berlin, N.W.7.

DIARIES

THE HOSPITAL DIARY is the bright idea of two well-known hospital secretaries, to assist those engaged in any kind of hospital work by combining a two-days-on-a-page diary with a good deal of useful information. Besides the usual postal and legal items, weights and measures, land metric equivalents, there are extracts from various Acts of Parliament which the hospital officer has to bear in mind—e.g., notifiable diseases, births, deaths, dangerous drugs, cremation—and the first 50 pages are occupied by a series of short articles on the burning questions of hospital policy of the day: the problem of the out-patient, contributory schemes, insurance, and road accidents. Included also is a list of firms which specialise in the supply of hospital commodities. The diary is said to contain "all the important dates in the hospital world"; it certainly is fairly exhaustive as to racing events, but curiously enough does not mark Nov. 5th, when eye hospitals at all events have to keep beds ready for juvenile casualties. The diary, which measures 9×6 in., may be obtained from G. R. C. Brook and Co., 27, Old Bond-street, London, W.1, price 5*s.* 6*d.*, post free. Next year it would be wise to make the cover more attractive.

LIPPINCOTT'S POCKET FORMULARY

Dr. G. E. Rehberger, author of Lippincott's Quick Reference Book, has brought out a third and revised edition of his Pocket Formulary (London: J. P. Lippincott Co. 15*s.*) which is intended to serve as a handy repository of modern therapeutic knowledge and to provide the practitioner with information not available to the unaided memory. Section I. presents the treatment of various diseases and symptoms, with the names and composition of drugs conforming to the tenth decennial revision of the U.S. Pharmacopœia and the fifth edition of the National Formulary. Section II. gives all these drugs in alphabetical order with their dosage, solubility, and action; it includes also a very useful list of new and unofficial remedies. The Formulary is conveniently printed and arranged and should be serviceable to all who are willing to familiarise themselves with trans-Atlantic therapeutic measures.

A MEDICAL ART CALENDAR

WE have received from Messrs. J. Philip Kruseman, publishers at The Hague, a medical art calendar for 1934, which is of convenient shape and lettered very legibly. It is illustrated with reproductions from famous pictures of medical significance. Of these there are 27, an average of rather over two pages of picture being allocated to each month. Most of the reproductions are from very familiar canvases, but the old friends in their satisfactory new shape will be welcome. As might be expected they are all of the Flemish School, many of them by such famous masters as Rembrandt, Gerard Dou, Karel Dujardin, and Van Helmont; but conspicuous among the pictures, as it happens, are two portraits by unknown masters, the persons depicted being Willem van der Straten, court physician to the Princess of Orange in the seventeenth century, and Jan Bleuland, professor of anatomy at Utrecht at the beginning of the nineteenth century, the latter giving the impression of quite an important picture.

EXCESSIVE LOCAL SWEATING

EXCESSIVE sweating of the armpits is a misfortune of which women patients occasionally complain. Often it will be found on inquiry that they have not exploited to the full the modern improvements in absorbent dress shields. The shields, made of proofed silk, are only suitable for women who perspire slightly; others will find effective shields such as those marketed by the Kleinert Rubber Company, made of very thin sheet-rubber covered with a double absorbent layer of fine cotton under fine silk. These can now be procured in large sizes, as wide as 9 in. across and with a high point which can be adjusted according to the area of maximum sweating. Women who remain uncomfortably conscious of malodorous sweating even when suitable shields are used and are frequently washed and replaced, may be advised to apply some local deodoriser and desiccating agent, and this is sometimes essential when evening dress is worn. Many proprietary preparations exist and may be applied indefinitely provided they contain *no irritants. Of these irritants* the chief is formalin, which ought never to be used as an ingredient of remedies designed for frequent application to the skin, valuable though it undoubtedly is as a deodorant. Preparations, such as Nonspi, which contain salts harmless in the strength of solution used, can be safely recommended for local application.

HOME SERVICE AMBULANCES

THIS voluntary service has now been established for some 14 years, and the increase in the annual number of road accidents within that time is reflected in the September quarterly report which has been issued. In the first 12 years of its existence the service carried one million cases; in the two years since then it has carried over a quarter of a million. The average number of cases carried annually has risen in the last five years by 25 per cent. Besides the drivers and their assistants the service also includes first-aid members who are often able with effect both to tend the patient and to restrain the untaught zeal of his friends. The service is organised by a committee working under the joint council of the Order of St. John of Jerusalem and the British Red Cross Society. The director and secretary is Major E. W. Paget, 12, Grosvenor-crescent, London, S.W.1.

MARCH FOOT

Mr. Harold Dodd[1] believes that *pied forcé* or march foot is a complication of subacute flat-foot, occurring in feet that are structurally weak. He quotes the observations of Morton, who described four radiographic signs, any one of which indicates a possible source of anterior foot trouble. These are: (1) a gap between the first and second cuneiform bones, tending towards excessive mobility of the metatarsal bone; (2) a short first metatarsal bone; (3) posteriorly placed sesamoid bones; and (4) as a corollary of these, hypertrophy of the second metatarsal bone. Examining radiograms from cases of march foot Dodd found one or other of these signs in 12 out of 13. The sequence of events is, he thinks, as follows: strain on a weak foot leads to muscular fatigue; during activity the foot goes into a valgus position with spasm of the interosseous muscles; and this throws more weight on the second metatarsal bone, which often hypertrophies. The congestion due to the spasm of the interossei causes hyperæmia, and hence enlargement of the foramina of the interosseous vessels. In this way a weak point is produced, and the final result is a spontaneous fracture.

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[1] British Journal of Surgery, July, 1933.

Births, Marriages, and Deaths

BIRTHS

ELKINGTON.—On Dec. 9th, at Malvern, the wife of Dr. Guy Elkington, of a son.

GILMORE.—On Dec. 13th, at a London nursing-home, the wife of James Henry Lascelles Gilmore, M.A., M.R.C.S., L.R.C.P., of a son.

MARRIAGES

CONYERS—BERKELEY.—On Dec. 16th, at St. Margaret's, [illegible] James Harold Conyers, F.R.C.S., to [illegible] na, youngest daughter of Dr. and [illegible] Mount," Addington, Kent.

DEATHS

CAMERON.—On Dec. 15th, at Toronto, Irving Heward Cameron, M.B., LL.D., F.R.C.S., Professor Emeritus of Surgery in the University of Toronto.

EDDOWES.—On Dec. 6th, at a nursing-home, Bath, William Eddowes, M.R.C.S., late of Shrewsbury, in his 95th year.

REYNOLDS.—On Dec. 14th, 1933, at 11, Brixton-hill, S.W.2, John Reynolds, M.D., in his 87th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

ADDRESSES AND ORIGINAL ARTICLES

WORKMEN'S COMPENSATION

ITS MEDICAL ASPECT *

BY Sir JOHN COLLIE, C.M.G., M.D. Aberd., D.L., J.P.
LIEUT.-COLONEL, R.A.M.C.; CONSULTING PHYSICIAN, MINISTRY OF PENSIONS

I OUGHT to make clear what is in my mind. My object is to assist the medical profession in the many difficulties which beset it, when its work impinges upon the law. I have no desire to instigate or encourage medical men to be suspicious or severe with working men—to whom I owe much—when they intend to exaggerate, but rather it is my desire, as a result of experience, to assist in seeing that justice is done. An enormous amount of medical work occurs in assessing the fitness or otherwise of the working man, yet those cases in which a warning is called for are comparatively few. If I have seen a larger number of difficult cases among working men than most, it is because I have devoted myself almost entirely to this class of work. For 30 years I served a corporation which is the largest in the Kingdom, and I have had referred to me by insurance companies and other bodies a large proportion of their difficult cases.

The scope of workmen's compensation has been so continuously, though gradually, extended since the passing of the first Workmen's Compensation Act in 1897, that it has now reached proportions which far exceed anything that was contemplated by those who passed what was then a very beneficent piece of legislation. In fact, the present-day position is regarded by many as imposing on industry burdens which should not legitimately fall upon it, and workmen's compensation is made to cover cases which, if they are to be dealt with at all, should be dealt with in other ways. The extensions have been brought about partly by amendments of the original Act made by governments of varying political opinions; but very largely by judicial decisions which have interpreted the, at times, somewhat obscure phraseology of the draughtsmen of the Act. Decisions have been given upon the particular facts of individual cases, often without regard to their effect upon subsequent cases. Certain it is that the judicial interpretation of the Acts has opened the door as wide as it can possibly be, and the principal direction in which the employers have to look for protection is to the medical side; and they have to rely upon a skilful and honest exercise of the medical man's function to see that their burden is not further increased. To assist in attaining this desirable end I am submitting a few conclusions at which I have arrived during my long experience of the working of these Acts.

It is a curious thing that an Act which provided that a workman shall be compensated for injuries sustained by him arising out of, and in the course of, his employment, should not define what an "accident" is, but so it is. It has been left to the courts to indicate the classes of case which can be described as accidents.

The following instances give an idea of the type of case which is now held to be covered by the words "by accident":—

1. A builder's workman who, whilst engaged on a scaffold, was struck by lightning.
2. A ship's officer whose duty necessitated his exposure to the sun in a West Indies port suffered from sunstroke.
3. A workman who crushed his hand died as the result of the anæsthetic when undergoing an operation for skin grafting.
4. A workman, whose arteries were degenerated, was the subject of a cerebral hæmorrhage whilst lifting a weight.
5. A gamekeeper who was attacked by poachers and injured.
6. A few boys in an industrial school attacked a schoolmaster causing his death.
7. A cashier was shot and robbed whilst carrying wages to a train.
8. A collier, who went to assist one of his colleagues who had received terrible injuries, became neurasthenic and quite unable to work.

The mental attitude of the judges is well exemplified by the decision in the case of a man who ruptured himself whilst at work. Lord Macnaghten in giving the decision of the House of Lords said:

> "A man injures himself suddenly and unexpectedly by throwing all his might and all his strength and all his energy into his work by doing his very best and utmost for his employers, not sparing himself or taking thought of what may come upon him, and then, as in this case, is told his case is outside the Workmen's Compensation Act because he exerted himself deliberately, and there was an entire lack of the fortuitous element. . . . I cannot think that this is right . . . it would neither be good for the man nor the employers. It would not conduce to honesty or thoroughness in work."

Their lordships came to the conclusion that the man was entitled to compensation under the Act. Although in this particular case one might well be inclined to agree with the views expressed, it is certain that the principle enunciated in this decision has been very considerably used as the basis for many extensions, the justification for which is open to doubt.

In addition to the provisions for compensation in the case of accidents, there are diseases caused by certain industrial occupations which are regarded as accidents and, therefore, the subject of compensation. These are such things as nystagmus in miners, cramp in telegraphists, and lead or mercury poisoning occurring amongst men working with these metals. There are 33 of these industrial diseases now scheduled to Section 43 of the last Act. In these cases the claimants have only to prove that they have contracted the disease while at their work, and they are deemed to be the victims of an accident within the meaning of the Act. A disease which is not scheduled to Section 43 does not come within the Act, for example scarlet fever. Although a man may contract scarlet fever from a fellow workman, when in a way his being infected arises out of his employment—it certainly occurs in the course of it—yet scarlet fever, not being a scheduled disease, compensation is not payable therefore by the employer. Formerly a workman who sustained injury in consequence of his or her own wilful default, or through disregard of express instructions by the employer, was held not to be entitled to compensation. This has now been changed, and an employer is held liable to pay compensation under circumstances which would seem unbelievable were they not the subject of judicial decision. I wonder whether the limit was reached when a court decided that a man, who had been injured whilst at work, was still entitled to receive full compensation for the incapacity, notwithstanding that he was serving a term of imprisonment for stealing from his former employer!

It would seem that the law has been interpreted

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* Communication to the Medico-Legal Society, Nov. 23rd, 1933.

very favourably to the workman, and that there is no need for medical men to take other than a strict view of their responsibilities.

Unreasonable introspection after recovery.—When this follows an accident it does not render the employer responsible. A man who had been genuinely injured, recovered, but fostered an abnormal mental attitude and said that he could not work. The medical referee stated that the man was fit for work. The judge reduced the weekly payments to 1*d.* The man worked intermittently and then gave it up. The case was referred to both medical referees of the court, and both reported that the man had recovered. The judge again awarded 1*d.* a week, and stated that it was a better method of cure than that suggested by a brain specialist who had recommended a sea voyage. The man took his case to the Court of Appeal, where his claim was dismissed. It is especially in cases of unreasonable introspection that the methods of counter-suggestion are valuable.

The law in regard to operation.—An operation not involving any great risk cannot be refused by a workman. He must act reasonably. If his own doctor advised him not to undergo the operation, his refusal is deemed to be reasonable conduct. The employer must satisfy the county court judge that any proposed operation is necessary, is likely to prove successful, and is not attended by undue risk. The judge is the arbiter of whether a man's conduct is or is not reasonable.

The memorandum of agreement.—Many employees imagine that in the event of a relapse their right of compensation will be taken away by returning to work, and, therefore, refuse to attempt work even when they are told that work would be beneficial. Their return in such cases is actually in their favour, especially when the employer admits liability by paying or by finding light work. Frequently workmen are nervous about returning to work fearing a relapse. Of course, it sometimes happens that there is a disabling effect of an accident which lies dormant. Such cases can be covered by filing in the court a "declaration of liability" or a "memorandum of agreement." There is no reference in the Workmen's Compensation Act to such a document as a "declaration of liability" but the courts have given countenance to this expression. A "memorandum of agreement" is recognised by the Workmen's Compensation Act. By it the accident is recorded, and any subsequent incapacity arising from it entitles the workman to compensation. The psychological effect of a memorandum of agreement may be noted, when an agreement is recorded in a court, and the workman, having returned to his old work, feels that he may be liable to a recurrence of his incapacity, the mental effect is similar to that which we see when an action at law is pending. Occasionally the workman becomes exceedingly difficult to deal with, sometimes he is unreasonable. He thinks he is a semi-invalid and should be treated differently from his fellow workmen. Sometimes he hints to his master that the recorded agreement is a weapon which he can use to prevent his dismissal, thinking that the master will be unwilling to defend further court proceedings. To avoid this difficulty, a legal friend adopts the following practice, which whilst fully protecting the workman, also fully protects the employer. Where the workman's condition permits of his resuming his normal occupation, but there is a *possibility* of future incapacity, instead of recording a memorandum of agreement, the solicitor undertakes (by letter), on behalf of the employer, to pay the proper compensation due to the workman under the Act, in the event of the workman at any future time, as a result of the accident, becoming incapacitated from following his employment. In the majority of cases, this undertaking is accepted. From a practical point of view, in the event of the workman's complete recovery, no application to the court is necessary in order to remove a recorded agreement from the register or to terminate an agreement.

Medical Examination

When patients consult a doctor their object is to get well. In general practice we believe all we are told. It is part of the bargain. The fee covers unlimited credulity. This does not apply to litigants when they are undergoing a medical examination. Take nothing for granted, not even the fee. Remember that most of the mistakes we make arise from the slovenly habit of assuming things. The detection of fraud depends very largely on the mentality of the examining medical officer. You will, of course, be impartial, and if you show it, it will facilitate your examination. When examining, remember that you are in the position of a judge, and that the employer has not commissioned you to dispense vicariously his charity. Sentiment is ill-matched with business. I often think of what I once heard Savage say: "In coming to your conclusions, you must do so in one of two ways—either as the result of judgment or sentiment. Do not forget that these run along parallel lines and can never meet." Examine your patient very thoroughly. Take full and careful notes and preserve them for the court. Copies may be furnished to the employer's solicitor, but retain the originals, because these original notes, made at the time of, or very shortly after, the examination, are those only from which you will be allowed to refresh your memory when in the witness-box.

In diagnosing these a small battery with a faradic current is very useful for unmasking fraud. The skin should be moistened with water (salt is unnecessary) and only a mild current applied. Two electrodes are required, the first of the ordinary shape and size, the other should have in the handle a small make-and-break key which can be controlled by the examiner's thumb, so that when the thumb is depressed, the key cuts off the current, although the battery is left in noisy action. The current being thus cut off without the examinee knowing what has happened, he naturally assumes that, as the coil is still noisily buzzing, the electricity *must* be reaching his skin (though of course it is not), and complaint may be made that the electric current greatly increases the amount of tenderness. One electrode is applied to any part of the body at a distance from the alleged painful spot, the other electrode (which has the break key attached) is made gradually to approach the alleged painful area. The break key is now depressed. The patient should then be asked to state definitely whether the current is felt, and if so, whether it increases as the handle approached the painful area. It is surprising how many men, hearing the noisy action, assume that the current must still be flowing through his body. Indeed, they sometimes describe the supposed electric current as producing "agony" or the "stab of a knife." I have, on several occasions, produced yells and howls in these circumstances. The test should be repeated several times, for a flagrant fraud should be put beyond possibility of error. Moreover, the technique of the experiment is sure to be called in question in court, and if the examiner can state that he repeated it, say, on three separate occasions, it is all to the good.

ALLEGED INJURY TO THE BACK

A friend told me that a patient of his who came for medico-legal examination told him that one of his friends gave him the following advice: "When you are being examined by the insurance doctor, say it's your back; the doctors can never get round your back." Back cases *are* difficult, and you will pardon my devoting a little time to the subject. When I was a young man, concussion of the spine was called "railway spine" and railway companies had occasionally to pay heavy damages. The condition was supposed to be due to organic changes in the spinal cord—the hysterical element was not recognised. The spine is still the happy hunting ground of both the malingerer and the functionally afflicted.

The spinal cord ends at the lower border of the first lumbar vertebra. Do not forget that one is extremely unlikely to find pyramidal trouble as a result of a blow on the sacrum. For the injury to extend to the spinal cord, an inflammatory lesion must travel upwards towards the cauda equina. This must be associated with meningitis and neuritis of the sacral region, which must inevitably be evidenced by wasting of the spinal muscles. This wasting in genuine cases is considerable, and its absence is of much diagnostic importance. There is no real analogy between concussion of the spine and concussion of the brain. The brain entirely fills the hard bony box of the skull, and is easily injured by a blow on the skull. The spinal cord does not nearly fill the spinal canal; it is suspended by lateral ligaments and surrounded by cerebro-spinal fluid. Alleged pain is generally psychical and not physical.

A claimant who alleges an injury to his back may say that he cannot bend it. He makes a slight inclination of his body forward from the hip-joints. You may at first have a little difficulty in deciding whether the injury is in the cervical, dorsal, or lumbar region. Satisfy yourself that there is no fixidity or rigidity of the cervical vertebræ. Instruct him to bend his head first to one side and then the other, whilst you look into the right and then the left meatus. You know that the dorsal vertebræ do not flex, for the thorax is a bony cage with the dorsal vertebræ behind the ribs at the side and the sternum in front. Therefore there can be no bending of the dorsal vertebræ in the dorsal region. Excluding the cervical and dorsal regions, it is clear that inability to bend the back, if present, *must* be confined to the lumbar region. This is a very important fact to grasp. For it means that the examiner may concentrate his attention *not* upon the spine as a whole, but upon the lumbar region exclusively.

On flexion and extension each lumbar vertebra moves a little on its fellow. The spinous processes on flexion are separated a very short distance from each other. Ask your patient to stoop. Press the fingers of your two hands between the spinous processes. Now ask him to raise himself slowly, and you will probably find, as the spine is straightened, that the spinous processes approach each other. If this takes place, and is done without pain, it goes a long way to show that there is no active disease. A favourite device of mine is to get the patient to stand on his tiptoes and then to come heavily down on his heels. You need ask no questions—but watch the facial expression!

I commend the following to you as a time and labour-saving expedient. It is of little value for medico-legal examinations which are to end in court, but it is useful for those who have to say either "yes" or "no" as to the fitness for work of a large number of employees. The working-man nearly always brings his hat into the examination-room. He seems as much afraid of losing it, as we all are of losing our umbrellas. Ask him, in a casual way, to place his hat *below* the chair on which he is to be seated. This does not strike him as being an unusual procedure. Indeed, he seems to think it is the proper place for his hat. He also assumes that the examination has not yet begun. As he stoops, casually remark in a low tone, speaking as it were to yourself, "there cannot be much the matter with his back *now*, judging from the way he can bend it." At the end of the examination of one who alleges that he cannot stoop (having arranged that during the examination the examinee has dropped his pants and trousers to his ankles) indicate with a sigh of relief that the examination is now over, and turn on your heel. You will sometimes be amused by the alacrity with which your patient will stoop and pull up his clothes, bending his back with ease.

Many men come for examination with their backs bent forward. They complain that they cannot assume the erect position when, in fact, they can. I suggest this very simple procedure. Ask the claimant to kneel, to bend his elbows, and to rest them on his folded clothes, which you have placed on the floor in front of him. If he does so, he is in the same position as if standing with his back straight. You now know whether the condition you have to deal with is real or feigned. Do not forget that a man who can touch the ground first on one side and then on the other is using exactly the same muscles as those which produce extension, and that, therefore, the erector group of muscles are not at fault. Simulated fixidity of the lumbar region may be exposed by the following means. The patient should be laid absolutely flat on his back, his heels, knees, buttocks, and shoulders should touch the table. The natural forward lumbar curve is, in this position, apparent. It will at once disappear if the thighs are flexed on the abdomen, unless fixed by injury or disease. Similarly, whilst lying flat on the table in the position above described, the patient is told to keep his knees straight and assume the sitting position, and then bend the upper part of his body a little forward, the normal forward lumbar curve, if not fixed by injury or disease, will entirely disappear. When the patient is lying on his back with his thighs bent on the abdomen, the position anatomically is the same as if when standing he stooped so low that his head was approaching the ground.

If a man can be induced to sit bolt upright in a chair with his legs fully extended, he is obviously bending his legs at right angles to his body, and would, were he standing up, be making a very low bow. Of course, a different set of muscles are brought into use, but this does not diminish the value of the test.

In the days of your youth when your character was being formed, you probably were taught these beautiful words:—

> "Better trust all, and be deceived,
> And rue that trust, and that deceiving,
> Than doubt one heart, which if believed,
> Had blessed the life with true believing."

In medico-legal work, I suggest a slight variation:—

> "Better doubt all, and be deceived,
> And rue that doubt, and that deceiving,
> Than trust one case, which if believed,
> Had let you down, beyond retrieving."

OTHER ALLEGED DISABILITIES

Inability to flex the digits.—In attempting to estimate the amount of maximum voluntary flexion or extension of digits, I am satisfied, from a very considerable experience, that it is hopeless to gain any real information unless the patient's view is entirely obstructed, and this should not be done by merely asking him to look on one side—he simply cannot do so. Therefore, it is imperative either that a book or newspaper should be held in front of his eyes, or better still, his permission be obtained to blindfold the eyes. A useful way of demonstrating ability to flex the fingers is to ask the patient to bare his forearm and partially flex the fingers on the palm. The examiner's fingers are then interlocked with the patient's who is asked to close his fist, thereby squeezing the examiner's fingers. It is now explained that he should attempt to resist the examiner's efforts to straighten forcibly his fingers. Not infrequently no attempt is made, and the patient's fingers are straightened without any force whatever. It should be explained that the examiner *knows* that the patient is making no effort to flex his fingers, for if he were the muscles of the forearm would harden (i.e., contract), and that the examiner sees that no attempt at contraction is being attempted. This (in my experience) often has the desired effect.

If this fails, a mild galvanic current should be applied to the forearm and the desired result will be obtained, more especially if Erb's motor points are stimulated. It is a mistake to think that there is much difficulty in doing this, and that Erb's points must specifically be stimulated. If the current is fairly strong, the individual flexors can be stimulated by merely moving the electrode over the skin of the forearm.

Alleged weakness of the muscles of the lower extremities is best tested against resistance. Get the examinee to pose on his tiptoes in the manner of a ballet dancer. He must do this with his boots and socks removed. He will often be induced to do so for a considerable time if the tips of the examiner's middle fingers of both hands are placed under the tips of the middle fingers of the patient's hands. This helps him to balance himself.

A. C. fractured his tibia some months previous to examination. It had firmly united, but he persisted in saying that he was too weak to walk. Yet he balanced himself on his tiptoes and walked and turned round on tiptoes. He told me that his doctor, whom he had just seen, considered it would be a year before he would be fit for work. If he did say so, which I doubt, we differed by 365 days, for I sent him back to work at once—and he went.

Fixation of the knee-joint.—When there is an injury to or inflammation of a knee-joint, the only comfortable position is a slightly flexed knee. Malingerers sometimes keep their knees rigid with a view to giving the impression that all movement is absent in the joint.

A. B. was a girl who alleged that her right knee-joint was stiff and immovable. Indeed, it had been in a splint for many weeks. When she came to me for examination I asked her to be seated, and at once I began to ply her with questions about the accident: whether the servants of the tramway company had been becomingly polite, what she said, what they said, all of which was no business of mine, indicating meanwhile that she should remove her boot which, of course, entailed the removal of the splint. She was immensely interested by my questions and her answers. She became very talkative and removed her splint and boot by adopting the very natural method of crossing the right leg over the left.

Injury to joints.—We have long since abandoned the habit of keeping joints fixed for many weeks after dislocations and fractures. Many joints become temporarily and even permanently disabled by this line of treatment. Even three weeks may bind the folds of a synovial membrane to a joint. In reducing adhesions round a joint the anæsthesia should be deep. To give an out-patient of a hospital nitrous oxide gas and then send him home to come back next day to be manipulated and massaged is to court disaster. The muscles are not sufficiently relaxed: adhesions are only partially broken down, and the patient naturally thinks he has had enough of it, and does not attend again. Massage should be commenced within a few hours and kept up. In the after-treatment the secret of success is to give the muscles very light work at first, such as exercising with a 2 lb. weight attached to a handle, and, later, exercises should be done by a rope and pulley. The pain will go in a few days, and heavier weights may then gradually be used.

Rheumatism and fibrositis.—Very often a joint is said to be rheumatic when really the fascia or more often the fibrous insertions and aponeuroses of surrounding muscles are affected by adhesions. Fibrous tissue enters largely into the composition of the muscles, and it is very apt to get inflamed. White fibrous cells proliferate and serous exudation follows. If you want to cure this so-called rheumatism you must grapple with it early. The older and more fibrous the adhesions the less chance there is of cure. There are often hardened circumscribed nodules, which may be the size of a split pea or a small shot or as large as half a walnut. They are always tender and when rubbed are apt to become temporarily painful.

Because there is crepitus, arthritis sicca is often called rheumatoid arthritis. The crepitus is due to folds of congested, flabby synovial membrane rubbing upon themselves. It frequently occurs after 40 years of age, and often exists without pain or inconvenience. There is no erosion of the cartilage, no eburnation of the ends of the bones, and the grating is not bony.

Alleged ill-health and persistence in the refusal to work are often due to nothing more than fibrous induration in the neighbourhood of the spinal cord and elsewhere. Women who are martyrs to neuralgia and neurasthenia often have these fibrous indurations as the cause of their trouble. Vigorous application of massage at the psychological moment would prevent many of these troubles. Do not forget that in most of these cases general massage is a waste of time and energy. See that the masseuse confines her attention to the painful joint, to nodules, and indurations. The skin should be shaved and smeared with oil. Massage should be gentle for a few days and then should become more vigorous daily. The muscles should be relaxed and the fingers pressed firmly but gently over the nodules. They are not always easy to locate even on deep pressure. Then comes the difficult period. The fibrous thickenings swell up and become painful. It requires some fortitude to withstand the temptation to give up treatment, for this inconvenience may last some days. No harm, however, can be done if the treatment is carried out judiciously. Vigorous treatment, even painful massage and friction, if persisted in, will be eminently successful, but remember it takes time for these fibrous nodules to disappear. Later, exercises should be done with Indian clubs, dumb-bells, or an exerciser, and should be persisted in for half an hour each day. Vapour baths relax the tissues and make manipulations less painful, and permit the rubbing to be more vigorous. In all cases, the more intelligent the patient, and the better the masseuse, the greater is the chance of success.

The Conduct of the Examination

Laymen should not be present at an examination, least of all a trade-union representative. By law even a solicitor is not entitled to be present at an examination under the Workmen's Compensation Act. It is well to remember, however, that this applies *only* to the Workmen's Compensation Act, and not to third party claims under the Employer's Liability Act or at common law. In common law actions, the solicitor can insist on being present—and he sometimes does. If he insists, my advice to you is to say "good morning" to him at the commencement of the examination, and "good-bye" at the end, and nothing between.

X rays.—If you wish to avoid discomfiture in the witness-box, an X ray photograph should be taken whenever it would be of any assistance. At an X ray examination, follow the plate into the developing room, see it developed and initial it, and then you will be able to prove it in court. When the negative is wet and fresh, it often shows points which the positive photograph does not. Moreover, you can discuss the plate with the X ray specialist and often get much assistance.

The following deductions may be drawn from the decisions under the Workmen's Compensation Act:—

> The workman has *no* absolute right to have his doctor present at an examination, although in many, if not in most, instances it is not unreasonable that he should be present, and indeed in some cases it is desirable.
>
> If the presence of the man's doctor is objected to, the county court judge or arbitrator decides whether it is reasonable for the workman to require his doctor to be present.
>
> A solicitor's office, or similar place of business, is not a proper place for a medical examination, and the workman's solicitor is not entitled to be present.
>
> It is not unreasonable for the workman to require the examination at his own place of abode or at the residence of his own doctor—that is, the workman is not bound to attend at the residence of the employer's doctor.
>
> That an examination by a doctor on behalf of the employers may be in the nature of a surprise visit, without prior communication with the workman or his medical attendant.

LIGHT WORK

When the conclusion is reached it is always advisable for the examiner to inform the workman that he is capable of light work. Judges have refused to reduce an award from a date prior to the proceedings, because the workman had not been definitely told that he was fit for light work. On one or two occasions I have recommended insurance companies to induce the employer to get an injured workman back to work, even although he does only a little work, and is being paid his full wages. Too often the anticipation of a lump sum settlement consciously or unconsciously affects an injured workman who is all but well. The working man's education is generally very incomplete, and he can rarely take a detached view of himself. He unconsciously places an undue value on any abnormal sensations he may have. He easily loses the work habit. Therefore it is desirable to persuade him to return to some work as soon as possible, but remember that a patient who persists in saying he is ill may be so, although you cannot discover the cause.

Certification After Injury

The Workmen's Compensation Act of 1925 sets out a new procedure which is one of much importance from the point of view of the medical man. Section 12 clearly enacts that an employer cannot end or diminish weekly payments unless the workman has returned to work, or a medical man has certified that he has either wholly or partially recovered. When a medical examiner certifies under this section of the Act that a man is fit for work, he must give his grounds for the statement on the certificate. A copy of his certificate, and a notice of the employer's intention to end or diminish the weekly payment, has to be served on the employee within six days of his medical examination. The workman can then send a certificate from his own doctor disagreeing with the certificate so served. In the event of such a disagreement, the matter must be referred to a medical referee.

Now the very practical point about this procedure is, that the medical man should be informed by the employer, when the case is sent for examination, that the case is coming or may come under Section 12 of the Act, in which case these two very important points should be borne in mind: (1) The certificate should be forwarded only to the party who requested the examination. (2) The certificates should set out very shortly, formally and succinctly, the grounds for the medical examiner's opinion.

It should be noted that this certificate is merely a formal document for the court as to the fitness or otherwise for work of the employee. It should not, therefore, contain observations or opinions which are intended for the information of the party requiring the examination. Such observations and opinions, which are often of considerable value to the employer, should be embodied in a *separate* report and headed "confidential comments." Nothing but the barest necessity of making it a valid certificate should be included in the formal document, because comments may provide material for a severe cross-examination.

As a certificate of fitness for work will probably lead to a cessation of compensation, and in many cases, unfortunately, to legal proceedings, it is desirable in suitable cases that the medical man should be supported by an X ray report, so that both he and the employer may at once be aware of the case, from a medical point of view, which is to be presented. The following simple form of certificate under Section 12 meets the necessary requirements of the section, and should of course be adapted to meet the facts of any particular case. It is taken from "Workmen's Compensation: its Medical Aspect."[1]

> I hereby certify that on ....day the .... day of ...., 193.., I examined S.... T...., of ...., in connexion with injuries sustained by him on or about the .... day of ...., 193.., and in my opinion the said S.... T.... has fully recovered from the said injuries and any effects thereof, and is fit and able to resume his employment as a ...., or to follow such employment as he could have followed prior to the said .... day of 193...
>
> The grounds upon which I give this opinion are as follows:—
>
> X ray photographs taken at the said examination show that the fracture is firmly united and is in good position.
> and/or There are no longer any signs of injury and there is no limitation of movement of his joint, or of loss of power.
> and/or There is now no evidence of any disability arising from the accident.
> and/or The injury has left no disability of any kind.
> and/or There are no objective symptoms of any kind and the pains of which the workman complains have no connexion with the accident in any way.

This *and* a separate document embodying "confidential comments" is all that is necessary.

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[1] Workmen's Compensation: its Medical Aspect. By Sir John Collie. Edward Arnold and Co. 1933.

The Medical Witness

To begin with the position of a medical officer in a public institution who is called upon for a report upon a patient in the institution differs considerably from that of a practitioner reporting upon a private patient. An inmate of a hospital or other public institution usually gives a full account of the happening of an accident, and freely submits himself to examination so that the medical officer may be in a position to effect a cure. To convey to a third party information so obtained would be wrong—indeed, it would be a flagrant breach of confidence—but it may be necessary with the patient's consent, in some cases, to make a report upon the medical side of the case, and *in this event the report should be founded upon the facts observed by one's self, care being taken not to include anything conveyed* by the patient as to the circumstances in which the injury was sustained.

A medical man's position in the sick-room is like that of the preacher in the pulpit—it is unassailable. In the witness-box, conditions are entirely changed. Your opinion will be probably hotly attacked by cross-examining counsel who has made an intensive study of the subject, and probably has been coached by another medical man. It is a good plan to postpone writing any report for the witness-box or elsewhere, until you have carefully thought the matter over. You will be surprised how values alter in the *changed perspective caused by an interval of even a* few short hours. To the inexperienced, the witness-box *is an ordeal, but it need not be so if you have* made a careful examination of your patient, kept your original notes, *given a detailed report* of the facts, studied the standard works on the subject, and tested your opinion by surveying your case from different points of view. Use non-technical language as far as possible both in the witness-box and in your reports. Your report should be framed in plain English. I once had a report from a young consultant submitted to me by an insurance company. It was laden with technicalities. For instance, he said: "Nephrolithiasis has induced pyonephrosis." Of course, what he meant was that a kidney was being worried by a stone in its inside, but why did not he say so?

Before the trial discuss the matter with an argumentative medical friend—you will have no difficulty in finding one—he will be only too eager to suggest what he thinks are fallacies in your opinion. This will give you an *opportunity for further fortifying* your position. Test your data from every conceivable angle. *Do not expose yourself to the possibility of* having a view presented to you in the witness-box which you have *not already considered. Study* very thoroughly the latest text-book on the subject. You cannot be too up to date when in the witness-box. I remember many years ago being opposed in the High Court by one of the greatest living authorities in medico-legal practice. Counsel led me carefully on, but I saw what was coming. The point was whether certain maculæ were abundantly present on the pleura in a case of suffocation. My evidence was that they were. I was asked if I knew Taylor's "Medical Jurisprudence" and I replied affirmatively. "Would you be surprised," said counsel, "to learn that Taylor disagrees with your view!" "I would," I replied, "for he does not." Counsel held up Taylor's "Medical Jurisprudence" and read from it. "What is the date of the Taylor from which you are reading?" I said. He told me. "Oh," I said, "you are three years behind the time. Your edition was published three years ago. There is a later edition, and the information I have given the court I read last night in the new edition just issued."

If the following rules are observed when in the witness-box, they will help to make your evidence effective:—

Look at counsel as he asks his question, make sure that you thoroughly understand *it and that there is no ambiguity* about it; then address your reply to the judge and jury, for they are the persons who have to hear and understand your evidence.

Answer the exact question asked, in as simple and concise a way as possible. Be careful not to give the court the impression that you consider it ignorant of the subject. It probably is, but make sure there is no doubt about what you mean to convey. The use of a model, photograph, or bone is often very effective in making an answer clear and impressing the tribunal.

Never give evasive answers; deal with the question perfectly frankly; if an admission has to be made, make *it at once and get the credit of being demonstrably fair*; the value of your subsequent evidence will be much *enhanced thereby.*

In cross-examination attempts are frequently made to force an answer to be given by a direct affirmative or negative. Medical questions can, without difficulty, be framed to which the answer "yes" or "no" would lead to an incorrect inference. Such questions should be answered directly, and the necessary explanation added because a witness has the right to make any explanation or amplification which is necessary after having given a direct answer. That eminent expert witness, Sir Frederick Bramwell, when pressed to answer a question "yes" or "no" got out of his difficulty by answering "yes" and no," and then added, "Now I will explain what I mean by that." It may be that a similar device will be of assistance when a particularly awkward question is put. Remember these things:—

Never put your case too high and be careful to avoid any display of bias. However confident one may be *that a plaintiff is attempting to deceive,* is untruthful or grossly exaggerating, this should not be alleged unless it can be strictly proved; it should be sufficient to state the facts and let the tribunal draw the inference. It is very desirable to say nothing that the opposing counsel can seize upon as displaying prejudice.

Watch carefully the questions put in cross-examination; a very usual device of counsel is to repeat evidence already given either a little watered down or over-emphasised. The inexperienced witness may *think that this is a slovenly* repetition and is good enough; he may find that it has been very *skilfully mis-stated* and, if allowed to pass, will be used very effectively later on. Make sure that *nothing is put forward as your evidence except that* which you have yourself said.

Speak slowly and distinctly. Remember, in the case of a trial by jury, that it is a lay tribunal, and that some, at any rate, of its members may be like Tom Pinch on the box-seat of the coach, "overcome by the novelty and splendour of their situation," and with anybody in that condition *it is necessary to be very clear and precise.*

Give the judge an opportunity of getting a full and correct note of your evidence. Break up your answers into convenient sentences; keep your eye on the judge's *pen and when you see it stop,* proceed with the next instalment.

Never lose your temper, however much you may be tempted to do so. An angry man is always at a disadvantage, and cross-examining counsel are well aware of this fact. If he insinuates that you are unobservant or misguided or even worse, deal with his suggestion and put him right *good-humouredly.*

Libel and Privilege

Few men understand the law of libel in relation to their medical reports. *The remarks I am about* to make with regard to the privilege a medical man enjoys in giving reports and statements, I have submitted to members of the legal profession and have received their approbation. When a doctor is asked to examine anyone on behalf of a person who, by law, is liable for the patient's condition, a relationship of the utmost confidence is set up. This relationship not only justifies, but makes imperative, a complete statement of an honest and bona-fide opinion. The report may be given fearlessly even though it involves assertions of dishonesty or fraud. It is, however, an essential condition that it must be made to, and only to, the person entitled to receive it. You may, under these circumstances, write a statement which would expose you to an action at law if published or shown to anyone not directly entitled to receive it. There can be no question of malice, provided one is merely stating his honest belief. It is then made under privileged conditions, i.e., when the report is made alone to an employer or his solicitor, upon whose behalf the doctor is acting.

The whole doctrine of privilege to a medical man is founded upon the assumption that he will honestly perform his duty to the person who has to rely upon him, and him alone, for technical advice, to enable justice to be done. If it is necessary to be very condemnatory, the report should be written personally and not dictated to a secretary. This may be rather laborious, but it is safe, and the addition of the word "confidential" at the top of the report and on the envelope makes the position secure. The events, in which privilege would not be absolute, can hardly be contemplated in connexion with a reputable practitioner.

The position with regard to statements made by a medical witness to a solicitor, for the purpose of preparing the proof of the evidence to be given in the witness-box, is perfectly clear, namely, that they are privileged.

HAY-FEVER

THE MECHANISM OF SPECIFIC DESENSITISATION

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In the opinion of most authorities there is at present no satisfactory explanation of the mechanism of specific desensitisation. Levine and Coca (1926) state: "The results . . . . provide no basis for a satisfactory explanation of the alleviating effect of the specific treatment of atopic conditions . . . allows no grounds for the assumption that the relieving effect of the specific treatment of atopic (hay-fever, asthma, &c.) is due to a 'desensitisation' (neutralisation of sensitising antibodies)." Cooke (1922) expressed a similar view. Rackemann (1931 (*a*)) summarises as follows: "Whether its effect is to reduce the quantity of cellular antibodies and thus desensitise the patient in a literal sense, or whether its effect is to induce the development of circulating antibodies and thus to provide immunity, is doubtful."

These views appear to be based in part on the following reports:—

1. The skin sensitivity is not abolished by treatment, and may be even greater after treatment than before (Cooke, 1926; Levine and Coca, 1926; Rackemann, 1931 (*b*); and others).
2. The serum reagin is not reduced in amount by treatment (Levine and Coca, 1926).
3. The results of specific treatment are unsatisfactory (reviewed by Rackemann, 1931 (*c*)).

The present paper reports the effect of specific treatment on the skin sensitivity and on the serum reagin (idioceptor [1]) of ten cases of hay-fever due to the grasses. The results are at variance with the above findings, and in conjunction with the results of previous work (Harley, 1933) allow of a rational explanation of the mechanism of desensitisation by inoculation of the specific allergen (idiotoxin [1]).

Methods

1. *The "prick" method of skin testing.*—This consists of puncturing the skin with a needle through a drop of the testing solution. The technique was introduced by Lewis (1924) in his study of the reactions of the skin to histamine. Freeman (1930, 1933) uses this method for routine examination at St. Mary's Hospital Clinic.

Three 1·0 c.cm. glass syringes fitted with No. 16 hypodermic needles are used: one is charged with saline, one with 5000 units per c.cm. pollen extract, and the third with 50,000 units per c.cm. extract. A drop is ejected on to the skin, and holding the syringe as a pen the needle is lightly pricked through the drop into the skin for a depth of about 1 mm. at right angles to the surface. The drops are gently wiped off with cotton-wool. The reactions are observed in ten minutes, and the weals traced on to a glass slide.

Though much stronger extracts are necessary to elicit reactions than by the intradermal method, the prick technique is more exact and duplicate tests of the same skin give reactions showing but little variation in size, so that slight differences in sensitivity are more easily recognised. The advantages over the scratch method are obvious. As the amount of trauma inflicted on the skin is much less than by the intradermal and scratch methods, doubtful and pseudo-reactions are less frequent. The rapidity and accuracy with which a large number of patients can be tested make this the best method for the clinic.

2. *Treatment.*—*Phleum pratense* (Timothy) pollen extract was used, having been shown to be polyvalent for the treatment of hay-fever due to the grasses (Noon and Freeman, 1908; Freeman, 1933). The stock extract was 100,000 units per c.cm. (10 per cent.) in alkaline saline containing 0·5 per cent. carbolic. Dilutions were made as follows with carbol-saline: 50,000, 20,000, 10,000, 5000, 2000, 1000, 500, and 200 units per c.cm. Treatment was by subcutaneous injection, preseasonal and seasonal, and was commenced at the beginning of March. The first dose was from 40 to 80 units according to the severity of the case, increasing by 20 units each time until the 200-unit dose was reached, when an increase of 15 per cent. on each dose was made, subject to adjustment as required by the reaction to the previous dose. Of the ten cases studied, one attended the clinic for the injections and received 3 to 5 injections weekly; the remaining nine, after a period of clinic treatment, were taught the inoculation technique, the estimation of doses, the modifications of dosage according to the previous reactions, &c., and were supplied with a syringe, a rubber-capped bottle of alcohol for sterilising the needle, and a supply of pollen extract (Freeman, 1933). They inoculated themselves daily; a bottle of adrenaline

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[1] Dr. John Freeman, director of the asthma clinic at St. Mary's Hospital, under whose direction I have been working, has recently suggested to me that the term "toxic idiopathy," which he previously suggested, and the terms "idioceptor" and "idiotoxin" which he now proposes, are more appropriate than the terms "allergy," "reagin," and "allergen" used in this communication. As the latter terms were used, however, in the preliminary paper on serological reactions in hay-fever (Harley, 1933), I have thought it better, for avoidance of confusion, to retain them in the body of the present paper, and to employ them in the summary.

chloride (1–5000) was issued, with instructions for use in case of general reaction. They reported every second week for examination and for a further supply of pollen extract. The maximum dose reached by each case was *100,000 units by the end of May*; a maintenance dose of 50,000 units was repeated at intervals during the season.

Results

The reagin content of the serum in the untreated case is proportional to the skin sensitivity.—Hay-fever serum was diluted with saline 1–1, 1–4, 1–16, 1–64, and, 1–256; 0·1 c.cm. of each was injected intracutaneously in a normal receptive individual; 24 hours later 0·02 c.cm. of pollen extract (2000 units per c.cm.) was injected into the sensitised sites and into control sites. The intradermal technique was used here in preference to the prick method in order to obtain the maximum reaction. Fig. 1 represents the skin reactions of three of the cases, A, B, and C, by the prick method, and the reactions of a normal skin sensitised with the three sets of sera dilutions, comparable sites having been used for each set.

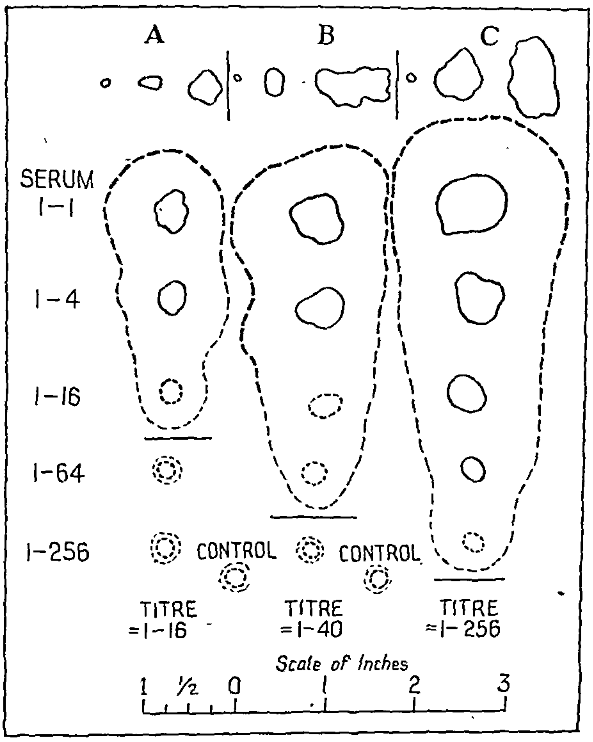

FIG. 1.—The serum reagin content is proportional to the skin sensitivity. Top part of diagram represents the patients' skin reaction weals (erythema not shown) to saline, to 5000 unit pollen extract, and to 50,000 unit extract, by the "prick" method. The reactions of normal skin sites, sensitised with the three sets of serum dilutions, to intradermal injection of pollen extract are shown underneath (interrupted line represents erythema).

The sensitising power (reagin content) of the serum was found to be proportional to the skin sensitivity, both as regards the size of the reactions produced and the sensitising titre of the serum. This is in agreement with the findings of Levine and Coca (1926).

Skin sensitivity is diminished and finally abolished by treatment.—The experience of the asthma research unit at St. Mary's Hospital is that the skin sensitivity is invariably reduced by treatment, and can be abolished entirely if suitable dosage is given (Freeman 1930, 1933). Fig. 2 shows the effect of treatment on the skin reactions of three cases, D, E, and F, these being typical of the whole series.

It has been stated by many investigators (Rackemann, *1931* (*b*); Cooke, *1926*; Levine and Coca, 1926; and others) that the skin sensitivity is not necessarily diminished by treatment, and may even be increased; in our opinion this is erroneous, and is due possibly to the following factors: first, the intradermal and scratch methods used by these workers are inferior to the prick method for detecting slight changes in sensitivity; and second, in the cases examined, the maximum dose was small compared to the maximum dose used in the present investigation, and seldom exceeded *5000* units, being frequently less; even with the prick method a dose of 5000 units produces sometimes little or no change in sensitivity, larger doses being usually necessary to reduce markedly the skin reactions. Brown (1932) and Markin (*1931*) reported abolition of skin sensitivity after treatment.

The reagin content of the serum is diminished by treatment.—The effect of treatment on the skin sensitivity and serum reagin of Case G is shown in Fig. 3. The same normal individual was used throughout for the passive sensitisation to ensure comparable results. This case is typical of the series. *It was found that little or no diminution of serum* reagin occurred as long as skin sensitivity was definitely present, but was reduced by continuing the treatment after the latter was negligible or abolished. In one case the serum reagin disappeared completely, *in the others they were markedly reduced*; it is thought probable that by continuing the treatment all reagin will disappear.

Reduction and loss of serum reagin after treatment was reported by Markin (1931). Levine and Coca (1926) stated that serum reagin was not diminished by treatment; the inadequate doses given to their cases was referred to above.

CLINICAL RESULTS OF TREATMENT

All the cases were marked sufferers from hay-fever, the condition having been present for periods varying from five to twenty years; several had received treatment with smaller doses in previous years, and had obtained some slight measure of relief. This year eight cases had complete relief, some under very testing conditions; one patient spent a week under canvas in hot weather with a luxurious growth of pollinating grass surrounding his tent; another had assisted in farm work with marked enjoyment and without a sneeze; the latter had suffered from severe hay-fever for fifteen years. The two remaining cases had no symptoms while in the country, but complained of slight catarrh and some sneezing on returning to the dusty city streets; here it seemed that though the hay-fever had been cured there was some secondary sensitisation remaining to a slight extent.

Complete relief from hay-fever was thus obtained by *all cases even under conditions conducive to heavy* dissemination of pollen. This is in agreement with the results obtained by Freeman (1930, 1933) and by Brown (1932); the latter in both grass and ragweed fever. The results of treatment by other workers were reviewed by Rackemann (1931 (*c*)), and by Coca, Walzer, and Thommen (1931); the percentage of complete relief obtained was from *10* to *30*; the doses given rarely exceeded 10,000 units. Though small doses do relieve a minority of cases, complete cure can be obtained by the use of doses which cause disappearance of all skin sensitivity (Freeman, 1933).

This is in disagreement with the opinion of Rackemann, Graham, and Scully (1926), who believe there is an optimum dose for each patient, and that poor results are obtained by exceeding this; I am in agreement with Brown (1932), who thinks their error lay in continuing to increase the doses during the hay-fever season of patients who were not well desensitised.

GENERAL REACTIONS

In spite of the large doses given only two patients had general reactions: one developed a moderate degree of urticaria after his first injection, the remainder of the treatment being uneventful; the other used the 100,000 unit bottle in error and gave himself a dose of 60,000 units instead of 30,000, but the reaction was rapidly controlled by the self-inoculation of adrenaline. The incidence of general reactions is in my experience less than usual. The patients who injected themselves were all of the intelligent class, and had good understanding of the rationale of the method and of the influence of local reactions on the estimation of subsequent doses, &c.

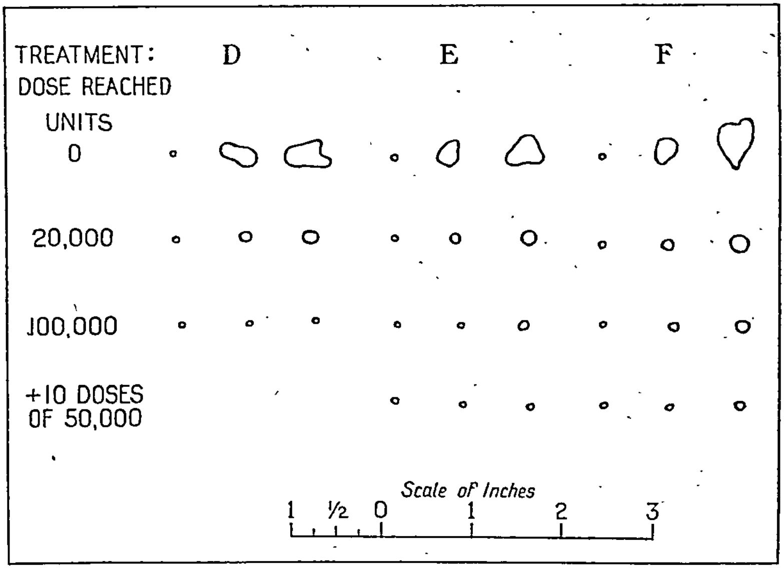

FIG. 2.—The effect of specific treatment on the skin sensitivity of Cases D, E, and F. The reactions represented are the weals (erythema not shown) to saline, to 5000 unit extract, and to 50,000 unit extract, by the "prick" method.

Discussion

Before proceeding to the problem of the desensitisation mechanism it is necessary to consider the modern views of the mechanism of the allergic reaction itself. The response of the sensitive skin to the specific allergen is similar to, if not identical with, the reaction of the skin to histamine, and is due to the liberation of a substance ("H-substance") which is either histamine or has a histamine-like action (Lewis, 1924–27). Dale (1929) believes that the reaction is due to the liberation of preformed histamine, present in the tissue cells, the union of allergen with reagin on or in the cell acting like other injurious stimuli. That a substance identical in properties with histamine is liberated during anaphylactic reaction in vitro is shown by the experiments of Bartosch, Felberg, and Nagel (1932); the lung of a sensitised animal was removed and perfused with a dilute solution of the antigen; the usual response occurred; the perfusing fluid leaving the lung was collected and was found to have developed the property of inducing contractions of *unsensitised* guinea-pig uterus and behaved exactly like a dilute solution of histamine. That a similar mechanism operates in man is indicated by observations of Rackemann (1931 (*d*)); he found that the serum of allergic patients drawn during a general reaction (caused by injection of the specific allergen) produced larger reactions in normal skins than did the same serum taken before the reaction.

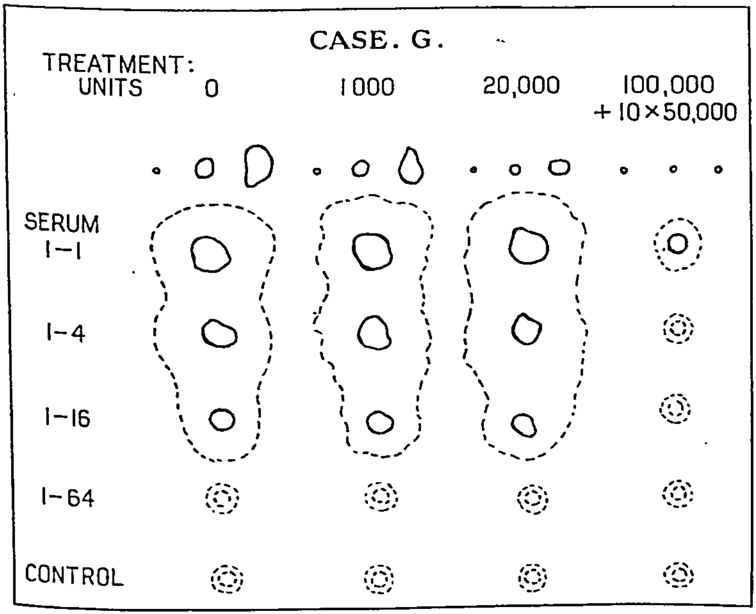

FIG. 3.—The effect of treatment on the skin sensitivity and serum reagin of Case G.

It has been shown (Harley, 1933) that reagin is inactivated by allergen only in vivo, but that a combination of the two occurs in vitro, and though the activity of the reagin is undiminished, the allergen is bound by it. In view of the abolition of skin sensitivity and of serum reagin by suitable dosage of the specific allergen, the following theory of the mechanism of specific desensitisation is suggested.

The allergen injected subcutaneously is slowly absorbed into the blood stream and there meets and enters into combination with the circulatory reagin; this prevents the immediate reaction that would take place if *free* allergen gained access to the sensitised cells. As the skin sensitivity was shown to diminish during treatment before any obvious reduction of serum reagin was found, it seems probable that the bound allergen is slowly given up to the sensitised cells, reacting with and neutralising some of the fixed reagin, but without any gross reaction being produced. The process of desensitisation would consist therefore of a slow allergic reaction, resulting in the complete neutralisation of reagin, first of fixed reagin, the circulating reagin acting as a brake on the supply of allergen to the sensitised cells, and later the passage of circulating reagin to tissue cells and its subsequent neutralisation.

What happens to the histamine substances formed as the result of this massive desensitisation? Dale has shown that histamine in the circulation calls forth the secretion of adrenaline which neutralises its action. Best and McHenry (1930) have demonstrated the presence of a histamine inactivating enzyme in the tissues of the dog and other animals, especially in the kidneys and intestine. They showed that histamine, added to the perfusing fluid of organs in vitro, was removed and inactivated.

The occurrence of general reactions during desensitisation is of interest. These are produced by the subcutaneous injection of a larger dose than the patient can tolerate, or by the rapid dissemination of a smaller dose—e.g., injection into a vein. One would explain these as due to free allergen reaching the sensitised cells and producing an immediate liberation of histamine in the case of immediate reaction following intravenous injection, and as due to the histamine inactivating mechanism of the body being unable to cope with the whole of the histamine liberated in the case of delayed reaction following the subcutaneous injection of a larger dose, even though the allergen reaches the cells in a bound state; or by a combination of both processes. The action of histamine in the circulation is neutralised by adrenaline (Dale); the general reactions are promptly relieved by adrenaline. It is a common occurrence during treatment to find a point at which the patient has a general reaction; however, on decreasing the next dose and then working up more slowly, one can usually get the patient over the point at which reaction took place. This would indicate that if the desensitisation process is an allergic reaction accompanied by the liberation of histamine as suggested, the tolerance of the patient to histamine might be raised as the result. Ramirez and St. George (1924) reported the histamine tolerance of two allergic cases had been definitely raised as the result of successful treatment.

It has been shown (Harley, 1933) that 1·0 c.cm. of serum from a case of moderate hay-fever requires over 40 units of pollen extract for its complete neutralisation in the skin of a normal person. A simple calculation shows that the total amount of reagin (allowing for fixed reagin) in a hay-fever patient would require pollen extract of the order of 500,000 units for its complete neutralisation. This is in agreement with the amount of pollen extract required in practice to abolish skin sensitivity and serum reagin. The hay-fever case treated with moderate dosage leading to diminution of skin sensitivity, but without carrying the treatment far enough to ensure complete neutralisation of reagin, may have satisfactory relief from hay-fever for the season, but after an interval there will be a redistribution of reagin from serum to skin with the return of a varying amount of skin sensitivity. The patient who has been completely desensitised, both as regards fixed and circulating reagin, is apparently a normal person as regards his reaction to pollen, and in order to become a hay-fever subject again he will have to manufacture a fresh supply of reagin. Whether such cases are permanently cured (as suggested by the results of Brown) or not remains to be seen, but the chances appear hopeful at least.

Summary

1. Ten cases of hay-fever (sensitiveness to grass pollen) were treated with massive doses of Timothy pollen extract (maximum dose 100,000 units). 2. The technique and advantages of the "prick" method of skin-testing, and the self-inoculation method of treatment, are described. 3. The amount of reagin (idioceptor) in the serum of the untreated case was proportional to the skin sensitivity. 4. The skin sensitivity was diminished and finally abolished by treatment. 5. The amount of reagin (idioceptor) in the serum was diminished by treatment. 6. Complete relief from symptoms was obtained in all cases. 7. Desensitisation by injection of the specific allergen (idiotoxin) is discussed and shown to be the result of neutralisation of reagin (idioceptor).

I wish to express my thanks to the Asthma Research Council for a research grant, to Dr. John Freeman for his advice and criticism during this investigation, and to Mr. Tom Harley for his assistance in preparing the diagrams.

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FAMILIAL ASTHENIC ("PARALYTIC") TYPE OF THORAX

WITH CONGENITAL ECTOPIA OF LENSES

A CONDITION ALLIED TO ARACHNODACTYLIA

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ARACHNODACTYLIA (spider-like fingers) is a mutational abnormality of development, which—on insufficient grounds—has been sometimes thought to be ætiologically connected with a defect in the pituitary gland, or some other endocrine disturbance. Typical examples are characterised by thin limbs with long tapering fingers and toes, an asthenic ("paralytic") type of thorax, poor development of skeletal muscles, and ectopia of lenses with iridodonesis (trembling of the iris on movements). Some of the following defects—all doubtless congenital-developmental or on a congenital-developmental basis—may be associated: slight scoliosis, kyphoscoliosis, kyphosis, or lordosis; "loose joints," over-extensibility of fingers, genu recurvatum; slight contraction of muscles of arms; scaphoid scapulæ; high-arched palate; slight abnormality in shape of external ears; slight webbing of fingers; slight congenital cardiac malformation; cyclic vomiting; slight acrocyanosis. The intelligence is generally quite up to the average.

A few years ago R. W. B. Ellis[1] demonstrated a girl, aged 8 years, who showed some features of arachnodactylia (with ectopia of lenses) and also had fragilitas ossium with blue sclerotics (what some French authors call "Lobstein's disease," after the author of the "Traité d'Anatomie Pathologique," published in 1833), the blue sclerotics being apparently inherited through the mother, the arachnodactylia through the father.

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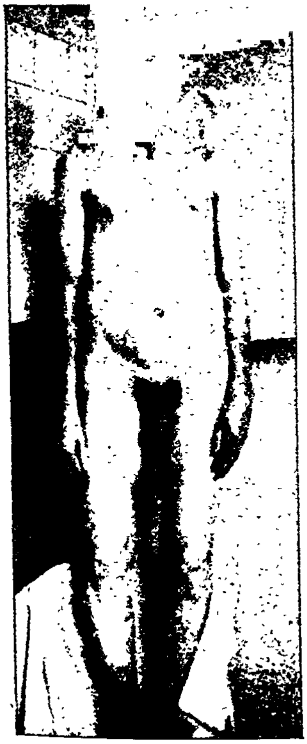
[1] Proc. Roy. Soc. Med., 1931, xxiv., 51 (Sect. Dis. Child.), Case 3.

There are doubtless congenital-developmental conditions allied to arachnodactylia, in some of which the spider-finger feature may be absent—that is to say, the fingers and toes, though rather thin and long, may yet be within extreme normal limits in length. For such cases the term "dolichostenomelia" (long slender limbs), introduced by Marfan of Paris in 1896, is more truly descriptive than the term "arachnodactylia" suggested in 1902 by Achard of Paris, and now generally employed. In some cases the limb-features may be more characteristic in upper than in lower limbs.



Photograph showing the poorly developed thorax and the long, thin upper limbs. Enlarged veins over the front of thorax and abdomen did not photograph well.

In illustration, I will now give a short account of a brother and sister, whom I have lately seen, with an asthenic habit of body — especially a "paralytic" type of thorax and congenital ectopia of lenses.

The *brother*, aged 19 years, is a somewhat lanky, pigeon-chested, scoliotic youth (see Figure), with a few "striæ atrophicæ" of the skin over his shoulders and groins, such as occasionally occur in connexion with rapid growth about the period of puberty without any other obvious causation.[2] Shortly after a long fatiguing day's walk in 1930 he became severely ill, with what seems to have been venous thrombosis in the left thigh, and about a year later (1931) he had a similar attack in the right lower limb, but less severe and of shorter duration.

He has irregular mottled patchy erythema with branched thread-like fine telangiectases over both feet, more on the left than the right foot, and more on the sides than on the back or sole. The red patches sometimes become livid, and some of them are very slightly raised. The feet are illustrated in the *Proceedings of the Royal Society of Medicine*, 1933–1934, xxvii., 137. There is no oscillometric or other evidence of any disturbance of the circulation due to obstructive arterial ischæmia, and pulsation is good in the dorsal artery of either foot. The patient has, however, large dilated superficial veins over the front of the thorax and abdomen, apparently connected with compensatory collateral venous circulation and suggesting that there has been venous thrombosis in the iliac veins or even in the lower part of the vena cava inferior. In this regard it should be noted that the erythematous telangiectatic condition of the left foot developed shortly after the venous thrombosis in the left lower limb in 1930, and the similar condition in the right foot was first noticed shortly after the venous thrombosis in the right lower limb in 1931.

There is aphakia (absence of crystalline lens) in both eyes. He had congenital ectopia of lenses, and operations had to be performed in 1931 and 1932, on one occasion by Mr. Frank Juler (as the latter kindly informs me), owing to acute glaucoma associated with dislocation of the lens forwards into the anterior chamber.

The patient's height is 166 cm. (without shoes) and his weight is 62·5 kg. He is of characteristic asthenic build, with long limbs but without the long spider fingers of typical arachnodactylia. His legs have apparently become thicker since the attacks of deep venous thrombosis. Rontgen ray examination shows no disease of the thoracic viscera. Brachial blood pressure: 126/65 mm. Hg. The blood-serum gives negative Wassermann and Meinicke reactions. By radiographic examination the pituitary fossa appears normal in size and shape.

I am inclined to think that there is an indirect causal relationship between this boy's congenital-developmental abnormality of build (allied to arachnodactylia) and the venous thrombosis and the telangiectatic condition of the feet. It should be mentioned that slight acrocyanosis has been already noticed in connexion with arachnodactylia.

The patient's youngest *sister*, aged 15 years (whose eyes my colleague, Dr. C. Markus, kindly examined with me), has extreme myopia, iridodonesis (trembling irides), and ectopia (congenital "subluxation" outwards) of the lens in both eyes. She also has slight spinal scoliosis and lordosis, and a deep depression or "well" in the lower part of her chest, somewhat resembling funnel chest (*Trichterbrust*); her fingers and toes are long, but (like her brother's) not longer than the extreme normal limit.

The parents both appear to be of normal build, fairly thick-set and of medium size, with fingers rather on the short side of the normal average. There is no consanguinity between them, and they do not know of any similar abnormalities in their families. They have had 14 children, of whom the two youngest are the brother and sister with the above-described abnormality of build. Six others are said to be living and normal. The remaining six died of various diseases.

Whether or not, in spite of the absence of parental consanguinity, the above-described condition is a Mendelian recessive, I regard it as one of the innumerable varieties of congenital-developmental mutational abnormalities. These can be reduced in frequency by the observance of eugenical considerations, but obviously cannot be altogether got rid of, for they may always arise de novo. The number of mutational "diseases" (and abnormal variations) which have already been described is enormous, but many that have been observed have not yet been recorded; new ones will arise from time to time, and finally atlases and indexes will be required for their proper classification.

DONCASTER ROYAL INFIRMARY.—At the recent annual meeting of this hospital Mr. A. A. Bell, chairman of the board, said that the out-patient department was "hopelessly out of date," and "in an appalling condition," and the mayor, Councillor G. H. Ranyard, added that he "had spent some time in workhouses, and conditions there are better." The Miners' Welfare Fund has allocated £9500 towards the erection of a new building to include the out-patients', massage, casualty, and X ray departments, but the total cost will be £25,000. During the year under review there were 3707 in-patients and slightly over 10,000 out-patients, a small decrease. There was a substantial fall in the number of out-, casualty, and massage patients, in consequence of referring patients to their own doctor or the district nurse, where treatment is readily available. The cost per occupied bed was £128 13*s.* 8¾*d.*

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[2] Compare F. P. Weber, Causation of Striæ Atrophicæ Cutis Not Due to Stretching of the Skin, Brit. Med. Jour., 1928, i., 255.

PERIPHERAL REFLEXES IN DISEASE

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IN 1917 I opened a discussion, at the meeting of the Dental Association in Birmingham, with a questionnaire on the correlation of oral sepsis and ocular lesions. On that occasion opinions were put forward which may still be taken as representative of the teaching of to-day, and the attitude of those of our professional colleagues who "insist upon having all the teeth extracted before having another guess" was strongly criticised. The subject of "diseases due to microbes or toxins carried to the eye by the blood stream from infective lesions of the teeth" brought many discriminating and cautious opinions whose consensus was that the evidence was not strong enough to prove a direct relationship between the two, though most of us were convinced on clinical observations of this possibility. Clayton-Cooper, however, held that "ocular disease with oral sepsis is simply a local manifestation of a general lowered vitality and is not caused by the primary microbe," and with this view I was then myself in agreement, at any rate to the extent that the "soil" was at least of equal import to the "seed"; but I felt that I could hardly support it sufficiently.

The time has come to re-examine the evidence on which the theory of focal infection has been based, and to see whether this idea is the "truth, the whole truth and nothing but the truth"; for I feel that whatever germ of truth there may be in it, and however comforting and gratifying it is to the searcher for cause and effect in diseases, the whole thing has been grossly abused. It must be admitted that there is a vast number of cases recorded where the removal of a septic tooth has been promptly followed by the relief of pain in another part of the body. These "spectacular" or "dramatic" results are, however, exceptional and rare, and as a scientific proof of causal relationship are no stronger than that of the relief often experienced after any surgical procedure, or the well-known cure of toothache on approaching the dentist's doorstep. Even Rosenow has to admit dismal failures in cases treated by removal of septic foci and the use of autogenous vaccines, and recognises the desirability of some other means, such as an antiserum, to supplement the methods generally adopted in the treatment of focal infections.

Further, if the matter of numbers alone is emphasised in this connexion its significance is annulled by the overwhelming preponderance of cases of oral sepsis without secondary infections, as compared with those in which such associated effects are assumed.

It is a common experience to find rheumatic lesions in people who have had their tonsils and all their teeth removed long before the appearance of rheumatic symptoms, and all the efforts of many specialists and experts to find a septic focus have been in vain. While this fact may be regarded as evidence of the inadequacy of our investigations, it may just as well indicate a fallacy in the theory of focal infection. This point of view seems supported by the investigations made with regard to the relationship between tonsils and rheumatic fever. Kaiser's statistics show 450 diseased hearts in 20,000 tonsillectomised children, and 817 diseased hearts in 28,000 children not operated on—i.e., 450 : 583 in 20,000 cases. As Lourie says, "to protect 133 children one has to victimise 19,867 children and remove 40,000 tonsils." Even the 133 children were possibly saved through some other and unknown factors rather than through tonsillectomy.

LOWERED RESISTANCE

Our certainty as to the diagnosis of infectivity in teeth or tonsils, and as to the time when secondary infection might be expected to emanate from such a source, must create an uncomfortable feeling in our minds when we try to justify the wholesale removal of teeth and tonsils as a preventive or curative measure for rheumatic or similar infections. Our mental perturbation is further increased by the fact that, even when a classical primary streptococcal focus has been discovered, we can form no opinion as to the organ or tissue likely to be secondarily infected, nor can we judge of the nature of the primary lesion from the clinical characteristics of the secondary lesion. Rosenow's theory of elective affinity, which assumes that certain strains of streptococci have a selective attraction for certain tissues, is not very convincing to me, as it does not explain why a streptococcus which must have been an inhabitant of the infected patient for a long time suddenly takes a fancy to attack a certain organ, such as the eye. According to Wilmer, the laboratory proof of pathogenic micro-organisms in the affected eyes is wanting, but even if the streptococcus were found it would be a practical impossibility to prove that it originated from an infected tooth, since the streptococcus appears to be found in different parts of the body even in apparently healthy people. More usually, and perhaps more reasonably, I think, it is assumed that the site of the secondary lesion depends more upon the soil than upon the propensities of the seed; that is to say, the affected organ or tissue is, for some reason, unable to ward off the invader as effectively as the other organs or tissues in the same body.

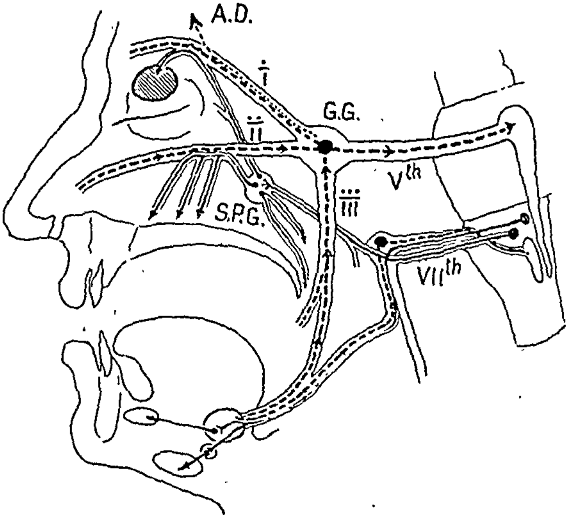

FIG. 1.—Long axon reflex (after Guillaume).

To explain this lowered resistance or vitality it is necessary further to assume some traumatism or disease at some earlier period, or even some inborn defect of structure. Beyond this I can find no further explanation of selective affinity, but when this reasoning is applied in cases where only one of two apparently similar organs, such as the eyes, is affected, it seems decidedly inadequate.

It is my experience that secondary disease of the type we are considering is, at any rate at first, confined to one eye and, further than this, it is restricted to the eye on the same side as the primary infective focus. I regret that I have no statistics of any extent to prove this point, but I find that my own impression in the matter is supported by the published reports of other observers. In almost all cases where the side of the infected tooth is mentioned the eye affected is on the same side. If we accept the theory of a blood-borne microbic or toxic infection, how are we to explain this unilaterality and ipsilaterality? It strains the theory of elective affinity to breaking-point.

There are other clinical facts which make me hesitate to accept the theory of focal infection in its entirety. I may mention the association of certain skin diseases with eye affections. Acne rosacea is frequently associated with keratitis and ulceration of a severe and persistent type, and although both the rosacea and the keratitis may be due to a common cause, and this again has been ascribed to dental infection by the extreme supporters of the focal infection theory, I do not know of anyone who has definitely stated that it is of streptococcal origin. Even this suggestion cannot be advanced to explain the association of chronic glaucoma with "nævus flammeus" of the face, which is ipsilateral where only one side of the face is affected, and bilateral when both sides of the face are involved.

Other degenerative diseases of epithelial and nervous structures, such as poliosis, vitiligo, and neuromata, are associated with disease in the eyes which cannot reasonably be ascribed to blood-borne infection. I am inclined to think that it is possible to get chronic glaucoma set up by the irritation of an unerupted molar. Similarly the neuropathic condition called herpes cornea may be set up through irritation of the nasal mucous membrane by nasal infections, especially "nasopharyngeal influenza."

I am disposed to define the course of the reflex set up by irritation of nerve-endings of the second division of the Vth nerve or its (Meckel's) ganglion, and which gives rise to neuropathic changes in organs supplied by the first division, as in Fig. 1, where the afferent stimulus becomes antidromic when it crosses from the second division to branches of the first division.

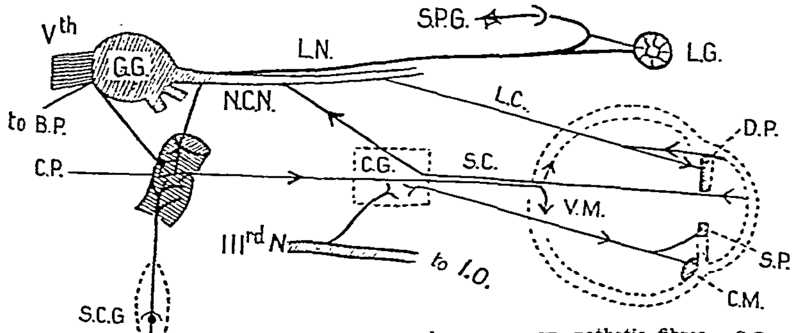

FIG. 2.—Scheme of ocular sensory-sympathetic fibres. G.G. = gasserian ganglion; B.P. = basilar plexus; N.C.N. = naso-ciliary nerve; C.P. = carotid plexus; S.C.G. = superior cervical ganglion; C.G. = ciliary ganglion; S.C. = short ciliary nerves; L.C. = long ciliary nerves; V.M. = vasomotor fibres; I.O. = inferior oblique; D.P. = dilator pupillæ; S.P. = sphincter pupillæ; C.M. = ciliary muscle; L.N. = lacrymal nerve; L.G. = lacrymal gland; S.P.G. = sphenopalatine ganglion.

REFLEX PROTECTION OF THE EYE

So far my remarks have been almost entirely of the nature of destructive criticism. I should not like to be regarded as a mere iconoclast, so I will now endeavour to formulate a possible alternative to the highly favoured idea of focal infection.

As a preliminary to proper evaluation of the various factors concerned in the prevention and cure of injury or disease, it is well to study certain defensive mechanisms which immediately come into action whenever living tissue supplied with sensory nerves is irritated by any means whatsoever. The adoption of the eye for the purpose of illustration has many advantages: the defensive mechanism is in the Vth nerve, which also serves the same purpose for the nose and mouth; many of the changes can be easily recognised; and, as it is a dual organ, any changes in the fellow eye can be observed. In order to exclude the discussion of complications and side-issues we shall take the simplest form of trauma—i.e., a scratch of the cornea. The reactions set up by such a non-septic injury may be enumerated as follows:—

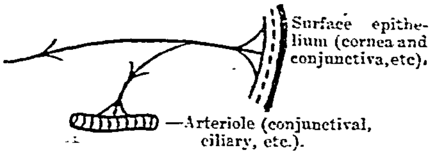
Surface epithelium (cornea and conjunctiva, etc).
—Arteriole (conjunctival, ciliary, etc.).

FIG. 3.—Diagram illustrating a short axon reflex.

(1) *The afferent nerve stimulus* sets up the series of changes which is called a "short axon reflex" and which is not necessarily of a painful character and in fact is not so in most cases. In the cornea, the primordial type of sensation has persisted to the exclusion of other forms and perhaps is the effective medium for the excitation of other protective reflexes for the eye—blinking, weeping, &c. In the teeth, axon reflexes would be activated by pressure on teeth and gums: hence the justification for giving the child with growing teeth something hard to bite and the desirability of hard rubbing of the gums as well as cleaning the teeth.

The pain due to irritation of the extremely fine plexus of terminal nerves in the cornea calls for conscious attention, and at the same time sets up the following protective reactions through the sympathetic (autonomic) nervous system (Fig. 2).

(2) *Congestion of the conjunctival vessels* (hyperæmia).—This, like the hyperæmia of the skin which follows application of a mustard plaster, is set up by an axon reflex passing from the terminal sensory ciliary nerves and reflected to the sympathetic fibres governing the conjunctival arterioles (Fig. 3).

(3) *Œdema of the conjunctiva* (chemosis).—This is presumably due to the vascular dilatation and alteration in the permeability of the capillaries resulting from sympathetic response. The œdema may involve the eyelids.

(4) *Increased secretion.*—Similarly, the lacrymal gland shows increased activity probably through reflex vascular dilatation. The increased flow of tears is perhaps primarily an effort to flood out the irritating particle, but it must be remembered that tears contain an enzyme called lysozyme, which has great anti-bacterial power and is able to destroy not only the non-pathogenic bacteria, but also many of the bacteria pathogenic for man.

(5) *Increase in albumin content of aqueous humour.*—That the axon reflex does not confine its activities to the conjunctival and lacrymal vessels is suggested by the change in the composition of the aqueous, which is probably brought about by alteration in the calibre and permeability of the ciliary capillaries.

These changes are assumed to be set up by a short axon reflex, since they are suppressed by the instillation of a strong solution of cocaine, which checks the action by anæsthetisation of the ciliary nerves, and by adrenaline which produces the same effect through its vaso-constrictor action, which counteracts the vasodilator reflex. The peripheral character of the reflex is evidenced by the fact that it is not disturbed under general anæsthesia. No doubt due notice of the breach in the outer defences is given to the central sympathetic-endocrine system, which makes immediate arrangements for the despatch of sero-chemical and cellular reinforcements should secondary infection supervene.

The effects of the primary stimulus are not confined to setting up this short axon reflex, since we find consensual changes in the uninjured fellow eye—notably some modification in intra-ocular tension and in the composition of the aqueous humour. How these changes are brought about is a matter of considerable speculation.

The significance of these reflexes in the defensive mechanism of the body is emphasised by observing the difference in the tissue reactions in cases where the reflexes are abrogated or disturbed, owing to paralysis of certain branches of the Vth nerve or destruction of the Gasserian ganglion, as in herpes zoster ophthalmicus and neuroparalytic keratitis.

"Keratitis neuroparalytica" is characterised by desiccation and exfoliation of the epithelium of the anæsthetic cornea, and this may lead to opacification and rapid destruction of the whole cornea, with development of hypopyon. These destructive changes are no doubt partly due to secondary infection, but their inception and rapid progress indicate diminished resistance of the tissues. This is often ascribed to the loss of that ill-defined factor—trophic influence. There is some ciliary injection, but the secretion of tears is restricted, and the consequent dryness contributes to the desiccation of the corneal epithelium, as do also the loss of sensation and the consequent loss of reflex blinking to remove miniature foreign bodies, such as dust, which may alight on the cornea. In fact, the protective covering of epithelial cells on the front of the cornea becomes as ineffective for the eye as the walls of Jericho for that city, and exposure to the air alone is sufficient—without the blast—to bring about a crumbling of its structure. In the matter of treatment, therefore, the question of protection of the insensitive cornea is all-important, and as the glandular secretion is restricted or abolished, efforts should be made to keep the eye moist as well as covered up, by suturing the lids or otherwise.

It will be observed that, in the absence or diminution of pain, active hyperæmia, œdema, and lacrymal secretion, the changes are the opposite of those which we regard as the protective reactions set up by corneal injuries when the nerve-supply is normal. These trophic lesions may be ascribed to interference with normal vasomotor impulses, resulting in abolition of power of vasoconstrictor inhibition, or to the setting up of irritative vasodilator impulses passing down as antidromic impulses in the sensory fibres.

ANTIDROMIC IMPULSES

These, like "trophic influence," are rather wrapped in mystery. There is evidence that antidromic fibres do exist, that they accompany sensory nerves towards the periphery, and that they arise from spinal ganglion cells. Antidromic stimulation always causes vasodilatation—after a relatively long latent period (2–8 secs. in the dog)—and exhibits long after-effects (10 mins. after the stimulus is removed). Small arteries and capillaries only are affected, but antidromic conduction plays no part in maintaining normal tonus; in fact it does not appear to be a normal physiological process at all (Kuntz). They have assumed such a degree of importance for the purpose of this dissertation that I may be pardoned for calling them dystrophic impulses. Obviously all afferent impulses, sensory or otherwise, do not set up antidromic impulses in neighbouring nerves, and the investigation of the character and source of the exciting stimuli appears to me a promising field of research.

One condition at any rate which does *not* appear to give rise to antidromic impulses is acute suppuration. But as a matter of fact there is no complete and satisfactory explanation of the processes involved in the production of neuroparalytic keratitis, or of the nature of trophic influence. Sherrington says:

> "Every nerve and nerve centre that can influence the proper and specific activity of a tissue possesses in so far a trophic influence on that tissue. If by trophic nerve be understood no more than this all nerves are trophic nerves. That, on the other hand, any nerve directly modifies the nutrition of a tissue independently of *inducing vascular changes in it*, or influencing those particular metamorphoses of material for which the tissue is the machine specifically adapted, there is no proof."

From this dictum I conclude that the changes in the eye in keratitis neuroparalytica result from failure of the vascular reflex and possibly also from some interference with the secretory fibres of the lacrymal gland. I say "some" interference advisedly since only the fibres involved in emotional weeping are supplied via the Gasserian ganglion and lacrymal nerve; the fibres which govern reflex secretion pass via the petrosal and vidian nerves, Meckel's ganglion, and orbital branch of the second division of the Vth nerve to the lacrymal nerve and gland. Supranuclear cerebral lesions are apparently not associated with neuroparalytic keratitis, but it has recently been reported by Cushing that operations for a variety of cerebral lesions may be followed by acute ulceration, associated with hæmorrhages, in the gastric mucous membrane and elsewhere. These complications are ascribed to disturbance of brain centres resulting in an imbalance between the sympathetic and parasympathetic systems. There is some evidence that these centres are situated in the hypothalamic region but, in the processes under consideration, the idea of such a central process can be excluded.

The axon reflex might be regarded as a local or short reflex, but in order to explain certain reactions in the skin and other external structures which are associated with disease in deeper structures, it is necessary to assume the existence of long-path axon reflexes (Krogh). The conception of such a reflex was originated by Langley (1900), who found that the stimulation of the central end of a cut nerve would provoke reaction at a distance—e.g., irritation of the proximal end of a cut hypogastric nerve produces contraction of the vessels in the anal mucous membrane. This action is brought about by an antidromic impulse. Since then a vast amount of clinical and experimental work has been done to elucidate the meaning of these preganglionic and postganglionic axon reflexes.

Clinically it is well known that diseased conditions in deeper structures and internal organs give rise to certain sensory, thermic, and vaso-secretory disturbances in definite regions of the skin and generally only in the metameric segment of the skin corresponding to the innervation of the internal organ affected, though under certain conditions of nervous instability or of intensity of the primary source of irritation, they may extend to a neighbouring segment or even involve the whole of one side of the body. It often happens that there is little or no pain in the exciting organ, and thus there is often a difficulty in diagnosing the primary lesion, but it may be stated that the offending organ (when not developmentally median) and the referred pain or other sensory disturbances are always on the same side.

The principle involved in this so-called viscero-sensory reflex may be illustrated diagrammatically much after the manner of its originator, James Mackenzie, who postulated that stimulation of the visceral afferent nerves sets up sensory-vascular and secretory changes in the skin and other structures in the corresponding metameric segment and, conversely, that stimulation of somatic sensory nerves causes alteration in the action of internal organs through the agency of the splanchnic efferent nerves. For my purpose it is not necessary to define the paths of preganglionic and postganglionic reflexes, but I think we can admit the fact that direct axon connexions between the internal organs and the skin and deeper somatic structures do exist, and it seems definitely established that the vascular and secretory functions are modified thereby. In less acute lesions there are also changes in the vascular and secretory functions, but we do not admit that the deeper structures—e.g., joints and ligaments—may also be influenced in more or less the same way, and that by some loss of trophic or vasomotor or vaso-secretory influence, these structures may become diseased or at any rate become easy prey to traumatic, microbic, or toxic influences (normally or exceptionally present in the system). Thus may be explained the degenerative changes in the skin and the defective circulation about the joints and in the limbs in rheumatoid arthritis, and the beneficial effects of sympathectomy in this and allied disorders whereby the hypothetical sympathetic balance is more or less restored, to the advantage of the nutrition and functional efficiency of the diseased parts.

The ease with which the sympathetic balance can be disturbed has been demonstrated by Leonard Hill, who found that the rays from an electric fire or other dull red source, by acting on the skin, cause a reflex congestion of the nasal mucous membrane, but that the rays from an incandescent lamp counteract the "nose-closing" rays, and that an Ilford screen (as used for taking infra-red photographs) permits the nose-closing rays to pass and cuts out the nose-opening ones. Glass, on the other hand, absorbs most of the nose-closing rays and transmits the nose-opening ones. The effect may vary according to the extent the sudo-motor fibres are stimulated.

Somewhat similar reasoning might explain the happenings in a case of bronchitic asthma. The first sniff of the cold morning air sets up the bronchial spasm, with its suffocating feeling and cough which persist until there is a vaso-secretory reaction of the nasal mucous membrane, which results in relaxation of the bronchial musculature. No doubt, vomiting, a pinch of snuff, the application of a mustard-plaster to the chest wall, protein shock, or cervical sympathectomy give relief through similar reflex sympathetic action. It should be remembered that on the same principle the extensive pilo-motor sympathetic system can be used for therapeutic purposes and has been applied in gynæcology; Imianitoff, by stimulation of the pubic hairs, produced a reflex contraction of the smooth muscle-fibres of the round ligament, erection of the uterus, and hyperæmia of the pelvic basin—conditions which are of great value in the treatment of a variety of inflammatory troubles affecting the uterus and its accessories.

In fact, the ways and means of affecting sympathetic balance must be legion, seeing that they depend on the nature, intensity, and periodicity of the stimulus, the character of the impulse set up by such stimuli, and the innate and acquired characteristics of the tissues (especially of the nervous tissues), whose reactions are to a great extent beyond our comprehension at present.

In illustration of the complexity of the defensive mechanisms of the body I should like to refer to a report on the work of Metalnikov, of the Pasteur Institute in Paris, on the nervous control in immunity. "Immunity," he says, "whether inborn or acquired, is an instinct of preservation, and most instincts of preservation involve the nervous system. The actions of defence are reflex actions of the nervous system whether conscious or, as may be the case in most animals, unconscious." Might not immunity from disease, which is one of the most basic methods of defence, also be under the control of the brain? Metalnikov's experiments were twofold in their object. In the first he showed that caterpillars might be rendered immune to Gaertner's bacillus by injections of dead bacilli, but that this immunity was not acquired if the third thoracic ganglion had been previously cauterised. This was the only ganglion of the central nervous system, whose destruction affected the power of acquiring immunity and proved the first point—the control of this power by a part of the nervous system.

The second experiments were successful in proving that the acquisition of immunity might become a conditioned reflex. In rabbits, immunity to cholera was achieved by the inoculation of dead cholera vibrios, and this was accompanied by scratching the animal or sounding of a horn. Later, when the immunity had passed off, it was found possible to restore it by the sounding of the horn or the repetition of the scratching without the injection of the dead vibrios.

SUMMARY

1. Certain objections are raised to the theory of focal infection and elective affinity in establishing secondary diseases, viz.: (*a*) lack of scientific proof in support of the theory; (*b*) unilaterality and ipsilaterality of the secondary lesions; and (*c*) the association of secondary diseases with non-septic primary lesions.

2. The following alternative suggestions are made: (*a*) secondary lesions result primarily from "lowered vitality or resistance" of the tissues secondarily affected; (*b*) lowered vitality is due to defect of "trophic influence" or to reflex antidromic impulses; antidromic impulses appear to dislocate vascular reflexes and cellular activity; (*c*) the vascular reflex is an essential factor in the maintenance of sympathetic balance, though probably other undetermined factors are also concerned; (*d*) the vascular state of the tissues can be influenced through short and long axon reflexes. The long axon reflex is antidromic and accounts for the incidence of the secondary lesion on the same side as the primary lesion.

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TRANSPLANTATION OF SUPRARENAL GLANDS IN ADDISON'S DISEASE

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Grafting of the suprarenal gland in animals has proved to be possible but difficult.[1] This paper reviews attempts to replace the gland by grafting from animals or from humans in cases of Addison's disease where its secretion is insufficient.

RECORDED CASES

In 1922 A. F. Hurst [2] recorded a case of a male, aged 41, who presented himself with a typical picture of Addison's disease. His systolic blood pressure when first seen was 120, but four months later this had fallen to 78 mm. Hg in spite of the administration of large doses of suprarenal extract and hydrochloric acid by mouth, and the injection of 1/1000 adrenaline hydrochloride. His blood picture revealed a red cell count of 5,120,000 and a hæmoglobin percentage of 80. A suprarenal gland removed from a man who had just died as a result of an accident was grafted subcutaneously in the inguinal region. A fortnight later the blood pressure was not improved, and a further graft removed from a fœtus just after death was grafted into the left testicle; 25 days later the anæmia was still worse (red cells 2,070,000 and hæmoglobin 28 per cent.). A blood transfusion was performed. After this he began to improve slowly and was discharged with a blood pressure of 95. Nine months after his second grafting his pigmentation had not improved, but he had stopped vomiting, his systolic pressure had risen to 115, and his hæmoglobin percentage was 80. The suprarenal graft was still palpable, the testis having partly atrophied.

In 1924 Morley Currie [3] reported a successful case. The patient was a woman of 50 who, in December, 1922, after what seemed to be an attack of indigestion, to which she had for 20 years been subject, failed to make the expected recovery and became weak and nervous. By August of the following year she was seen again by Currie. She was very weak, suffered from attacks of diarrhœa, and showed marked pigmentation of the abdomen, chest, and thighs. She also suffered severely from pains in the back. Adrenal extract by mouth and rectum and the injection of adrenaline failed in this case also to cause any improvement. In December, one year after the onset of the disease, when the patient seemed moribund, the suprarenal gland of a sheep was transplanted into an abdominal incision going down to the deep fascia. This transplantation was in position one hour after the death of the sheep. Four days later the patient was better. Her blood pressure had gone up from 70 to 110. Nine days later, unfortunately, the transplantation had suppurated and the patient relapsed. Owing to the temporary improvement, however, a further transplantation of both suprarenals of a sheep was carried out. The transplantation was in this instance effected in the following manner. The suprarenals of a recently killed sheep were removed with full aseptic precautions, dropped into warm saline, and cut into fine strips with scissors. The strips were then skimmed off the salt solution with a spoon and placed in the barrel of a 10 c.cm. syringe with a wide bone needle. The needle was inserted into the subcutaneous tissue of the patient on each side of the abdomen, and the tissue forced out as the needle was withdrawn. The operation was completed one and a half hours after the death of the sheep. Four days later the patient was improved; her blood pressure was 90/75, and after a fortnight she was able to sit out of bed. Two months later she was up and eating a general diet; the diarrhœa and vomiting had completely stopped, and her blood pressure was 100/75. The pigmentation was distinctly lighter, and the transplantation masses were of about the same size as at the time of injection; they were not tender and showed no signs of breaking down.

Reinhart [4] recorded a third case in 1928. In his case the suprarenal of a case of tuberculosis of the kidney in which, owing to the matting of the tissues, the gland had to be removed with the diseased kidney, was dissected, cleaned, and inserted into the abdominal wall of a patient in the last stages of Addison's disease. The site chosen was a pocket between the peritoneum and the muscular layers. The beneficial effect soon began to show itself. Appetite returned, pigmentation faded, the blood pressure gradually rose from 85 to 110–115–125. The harmonic working of the adrenal tissue with other glands was shown by a regulation of the blood-sugar and a remarkable re-establishment of menstruation. There had been amenorrhœa since the onset of the disease, but eight days after the transplantation a heavy period began which lasted four days, with pain so severe that morphia was administered. Five months after operation the improvement was still sustained.

THE AUTHOR'S CASE

In view of the hopeful results in the cases quoted above, the operation was carried out some months ago on a patient at the Queen's Hospital, Birmingham.

A female, aged 27, was admitted under Dr. L. G. J. Mackey on Feb. 28th, 1933, complaining of a progressive general weakness, loss of appetite, and vomiting of seven months' duration. She had a pulse-rate on admission of 112 and a temperature of 97° F., and her blood pressure was 66/40. She seemed excessively weak, and there was a generalised brownish pigmentation of the face and neck, and a large patch of pigmentation on each buttock. There was no personal or family history of tuberculous disease, and a urinary investigation in hospital failed to reveal any tubercle bacilli. Her blood-sugar was 93 mg. per 100 c.cm. Suprarenal extract, both as dry and liquid, was administered orally without any beneficial result. Intravenous salines and glucose were given; these produced temporary benefit with a raising of the blood pressure, but a phlebitis which set in whenever they were administered precluded further treatment on these lines. The blood pressure fell even lower in hospital, and the pigmentation and weakness became more marked. On March 31st the suprarenal glands of a patient who had just died were removed and transplanted into her. By this time the blood pressure had fallen to 40 systolic, the diastolic pressure being undeterminable.

The operation was carried out in the following manner. The bed of a patient who was dying of cerebral thrombosis was placed next to that of the case of Addison's disease, the two beds being of course completely screened off. The abdomen of the dying patient had been prepared as for a surgical operation, and immediately after death, under full aseptic technique, the abdominal cavity was opened by myself and Mr. R. W. C. Murray, the surgical registrar. The suprarenal glands were rapidly exposed by stripping back the peritoneum, and were removed and placed into warm saline without being handled. Mr. Hugh Donovan, who was waiting by the bed of the recipient, made incisions as shown in the diagram into the subcutaneous tissues. The gland was cut up into thin slices and inserted into pockets made through the incisions. Into pockets 1 and 2 four or five vertical sections of about 2 mm. thickness and into pocket 3 two longitudinal sections of a greater thickness (about 5 mm.) were placed. The wounds were then closed with a few sutures.

By evening the patient's condition was very poor, the systolic blood pressure being less than 40. An

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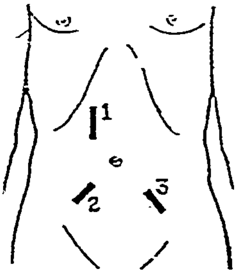
intravenous transfusion was attempted, but no fluid would run into the veins. Rectal saline solutions were returned. The following day the blood pressure had risen to 55, and four days later to 65. There was a gradual rise until April 12th, when it reached 76 systolic. On April 10th Mr. Murray removed the left suprarenal gland of a recently dead new-born infant, with full aseptic precautions, and inserted it whole into the abdominal wall of the patient through an incision made under local anæsthesia. After this the blood pressure rose for two days to its highest figure since admission, but thereafter again fell. The patient died on the 19th, her blood pressure on the day of death being 50/28. Post mortem it was found that the grafts had become septic, and there was pus in the depths of the incisions. Dr. A. V. Neale's report on the endocrine glands was as follows :—



Thyroid : average size, normal appearance. Thymus : small, normal for age. Parathyroids : of normal appearance. Pancreas : no abnormality discovered, except slight general atrophy. Pituitary : normal appearance. Ovaries : normal appearance. A recent corpus luteum (? menstrual) present. Right suprarenal : very small, practically complete absence of the cortical substance ; no evidence of any tuberculous disease. Left suprarenal : similar atrophy, but the medullary substance was more prominent ; a few small areas of yellowish cortical tissue just visible. The blood-vessels to the glands appeared to be normal, and the associated sympathetic nerves and ganglia were normal in appearance.

Microscopical sections.—Right suprarenal : very little cortical tissue present ; atrophic change and simple lymphocytic reaction diffusely throughout the gland ; similar changes in the medullary area. Left suprarenal : similar changes. The local sympathetic ganglia showed early atrophic changes in the cells and lymphocytic infiltration with reactive sclerosis. Heart muscles : brown atrophy. Kidney : no unusual appearances. Parathyroid gland : normal appearance. Skin : melanotic increase seen in the deepest epidermal layer. Pituitary gland : a small simple cyst present ; otherwise normal. Liver : normal. Bone-marrow : a moderate increase in normal activity. Pancreas : normal acini and islets. Aorta : normal. Spleen : simple passive congestion. Thyroid : normal acini ; simple colloid changes in a few areas.

COMMENTARY

Although the grafting in this case eventually failed owing to suppuration around the grafts, a very definite though temporary improvement was caused by the transplantation. The patient herself was in a very advanced stage of the disease, and was in a very unsatisfactory condition for a successful result. The only available suprarenal was that of an old woman of 73 who was not an ideal subject, to say the least, and the stillborn infant was premature and poorly developed. It is felt, therefore, that the amount of improvement noted in this case, where conditions were unfavourable, and the results in the three cases recorded previously, warrant the further trial of this operation in cases of Addison's disease.

Points in the actual technique of the operation which, from a consideration of this case and the available literature, seem to be worthy of consideration are :—

1. That the graft should be removed from the dead patient as rapidly after death and with as much care for asepsis as possible. Opportunities for using a suprarenal of a patient still alive, as in the German case, must be so rare that the possibility should not to my mind be considered for general application.
2. From the behaviour of grafts in general it is seen that grafts in strips are more likely to function than whole glands, as a functioning graft is that which is actually penetrated by the blood-vessels of the host, such penetration rarely exceeding a depth of 2 mm. Preferably, on general grounds, the donor and recipient should be of the same blood group.
3. In view of the harmonious working of the testes and the adrenals and the success of such a graft as that recorded above, the testes seem to be the most favourable site. Failing this, a site between the peritoneum and the muscles of the abdominal wall should be employed.

I am indebted to Dr. Mackey, Dr. C. C. W. Maguire, and Mr. Donovan for permission to record this case. Dr. Maguire suggested, and Mr. Donovan supervised, the operation and helped me materially with the collection of references. My thanks are due also to Dr. Neale for assistance with the pathology.

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NATURE OF FUNCTIONAL DISTURBANCE IN COCAINE HALLUCINATIONS

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THE hallucinations that occur in chronic cocainism are in certain respects very like those of delirious states. Kraepelin and, later, Bumke have regarded chronic cocainism as midway between delirium tremens and acute alcoholic hallucinosis so far as the symptomatology is concerned. The characteristic of the hallucinations in chronic cocainism is that they are treated by the patient (whose judgment of reality is otherwise intact) exactly as though they were real perceptions, and are experienced at the same time in different sensory fields, so that the patient sees the insects which he "feels" on his skin or under it, and may even, if he supposes he is crushing them with his finger nail, hear them. These features are very like those of the hallucinatory experiences of delirium. On the other hand, it must be emphasised that the total state of consciousness of the cocainist with hallucinations is essentially different from that of the delirious patient. Moreover, cocaine hallucinations show a typical uniformity among themselves such as is rarely or never found in other disorders. In the great majority of cases the patient complains of small or even microscopic creatures which run about on his skin or under it. It looks definitely as though in the development of these hallucinations they had their origin in cutaneous sensations.

Changes in chronaxie have been found by Régnier[1] and changes in the sympathetic ganglia by Ide[2] after the administration of cocaine over long periods. It would, therefore, not be surprising if the use of other delicate methods—e.g., testing with von Frey's hairs—should show changes also. As far as one could see, however, the previous findings only point to a more or less peripherally situated lesion, so one would have to say that it is a question of the delusional evaluation of paræsthesiæ actually sent and conditioned by peripheral changes. There are weighty clinical objections to this assumption. Delusional evaluation of paræsthesiæ conditioned by trophic or vascular or neuritic changes occurs commonly enough—for example, in delirium, *in senile or arterio-sclerotic* processes, and in other exogenous psychoses. But in such delusional elaborations there is never the uniformity, ceteris paribus, which is so *striking in cocaine* hallucinations. The significance of this factor is therefore limited. Cocainists scarcely ever complain that electricity is running through their skin, that they are being pricked or given injections, or tickled with hairs, or that they have a skin disease.

The question is rather this: are the cutaneous hallucinations dependent, not on peripheral, but on central processes which more or less definitely determine the occurrence and form of the morbid experience? If this were so, any tendencies towards delusional elaboration would take effect only within a limited range. This would still obtain, even though in states clinically akin to delirium such tendencies could very well take on a hallucinatory character.

THE INVESTIGATION

To investigate this point tests with von Frey's hairs were carried out on a chronic cocainist who had also been taking morphine.

The patient, who was aged 32, said that following on his injection of cocaine he felt and saw small, whitish flagellate creatures come out of his fingers; he had tried to flick them off with his nails or by other means.

The examination was made 20 hours after the last injection. With von Frey's hairs for touch and pain, large skin areas, and smaller ones of 5 × 5 mm., were tested carefully. In the larger areas it was sought to discover how often on the average the same stimulus was felt, and in the smaller areas the onset of fatigue for the same strength of stimuli was looked for. (The necessary normal values for each strength of stimulus were known from earlier investigations.) Areas on the chest and upper arm were tested.

Touch stimuli.—On applying Sp. 4 to a largish area *of skin (7 × 7 cm.) quite irregular* and *often* big gaps were found—i.e., often 6–8 stimuli could not be felt. (The average value for normals is 1·1 to 1·8—i.e., it never happens that even every second stimulus is missed and gaps of the size here found are out of the question.) Even using Sp. 6 (normal average value 1·0 to 1·2) there were found gaps of 3 to 5.

Essentially the same was found with *pain stimuli* of 1–2 g. (average value for normals using 1 g. is 1·0 to 1·2; with 2 g. it is 1·0 to 1·5). Here, too, there were gaps. It would happen that there would be five or six applications of the hair which would not be felt by the patient as a prick. On the other hand, especially with touch stimuli, the patient often said wrongly that he was being touched during the one to three seconds' interval between the applications of the hairs—but this only happened when several stimuli had already been applied.

In small areas (5 × 5 mm.) after 30–40 applications (Sp. 4 and Sp. 5) gaps of 12–15 occurred for touch stimuli, and for pain stimuli (1 g. and 2 g.) gaps of 5–6. Complete fatigue, so that small areas were not felt at all, did not occur.

When two days later—i.e., *three days after the last dose* of cocaine—the investigations were repeated, the patient gave an absolutely normal response in these regards, in spite of severe deprivation symptoms following withdrawal of morphine, which might have impaired his power of attention. Occasionally, however, he would say he was being touched when it was not so.

CONCLUSIONS

Von Weizsäcker[3] and Kries have shown that in purely peripheral nerve lesions gaps will occur on testing with von Frey's hairs, but these are for the most part quite regular, so that it does not happen that five or six uniform stimuli successively applied are felt, and then the next five or six not felt. I have shown in an earlier paper[4] that in peripheral lesions fatigue phenomena occur also, but only after much longer series of stimuli, and certainly not so quickly as in this case. The findings here point to a disturbance of function which is conditioned by *impairment of central mechanisms.* In further investigations the detailed nature of this disorder of function must be studied to discover what in it is typical for the development of hallucinations.

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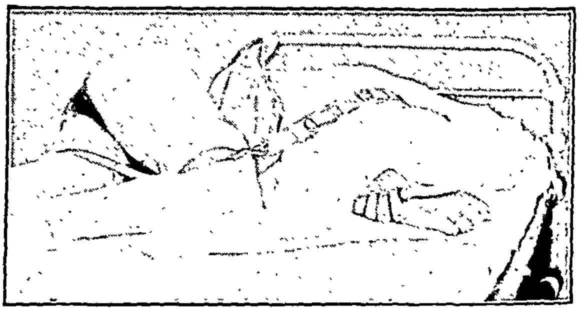
NEW INVENTIONS

AN IMPROVED OBSTETRIC BELT

THE obstetric belt here illustrated is devised for use in forceps delivery when the left lateral position is the one chosen. Such deliveries have frequently to be undertaken by the general practitioner with inadequate help, and experience of the use of the belt shows that by its application, in conjunction with the midwifery straps to the thighs, the patient is kept in the required position and that any "pull" on the belt aids delivery, since it acts like a "tight binder." The belt is wide and is shaped to fit the maternal abdomen, while the ends are prolonged to form straps which are easily fixed to the near top corner of the bed. The advantages of the belt are that the patient is retained in the desired position; the nurse is released and is available; the fundal pressure of the belt aids delivery; *and the belt is easily applied.* A smaller belt may be used in addition to the abdominal belt if required. This belt fits over the shoulder-blades and the ends, passed under the armpits, are fixed to the far lower corner of the bed. In practice it is seldom found necessary to use this further aid.



The belts are supplied by Messrs. Allen and Hanburys Ltd., of Wigmore-street, London, W., together with their "midwifery straps" which are now made with rustless fittings.

C. J. PENNY, M.D. Camb.

PROGRESS OF BIRMINGHAM HOSPITAL CENTRE.—At the recent annual meeting of this Centre it was reported that the appeal fund now exceeds £696,000, of which £140,000 has been given this year. Preliminary work has actually begun, and a committee of the university is considering the planning of the new medical school.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF PHYSICAL MEDICINE AND OBSTETRICS AND GYNÆCOLOGY

These sections met on Dec. 15th, under the chairmanship of Dr. M. B. Ray, to discuss the value of

Physical Medicine in Gynæcological Conditions

Dr. E. P. Cumberbatch assumed for the purposes of discussion that "gynæcological conditions" meant maladies due to disturbance of structure or function of the organs peculiar to women. These conditions he divided into two main groups: (1) those which left no doubt that disease of uterus or adnexa was the cause, and (2) those in which the cause was not obvious. In group (1) diathermy was of value in: (*a*) dysmenorrhœa due to inflammation of the pelvic organs peculiar to women and the pelvic supporting structures; (*b*) amenorrhœa in women who had ceased to menstruate, were in good health, and not pregnant; (*c*) menorrhagia and irregular menstruation due to inflammation of the uterus or its adnexa; (*d*) salpingitis in the absence of pus; (*e*) cervicitis which betrayed its existence by an abundant discharge; (*f*) the relief of menopausal symptoms. With regard to group (2) many women with chronic and persistent pain in the lower part of the back, who looked ill and miserable and were easily tired, were cases of toxic absorption following disease in the pelvis. Dr. C. A. Robinson had established the pelvic origin of this trouble and had defined this low backache cervicitis syndrome. In the eradication of infection from the cervix diathermy was of the greatest value in expert hands. In another disease, arthritis of the infective type, an infected cervix was often present though it might be overlooked unless a speculum was used. The joints should not be treated until the cervix was cleared up. Menopausal arthritis and hyperpiesia were often improved by diathermy applied to the ovaries, which was also of benefit in women at the climacteric who complained of limitation of range of movement at the hip, knee, or neck. Dr. Cumberbatch insisted that this treatment must be given by an expert, particularly in respect to the cervix, which must have its temperature raised to 115° F.

Mr. Martin Oldershaw spoke of the medical use of intrapelvic diathermy in gynæcological conditions. During the last ten years he had been in close touch with the valuable pioneer work of Dr. Cumberbatch and Dr. Robinson. Not much interest in this method had yet been aroused among gynæcologists, probably because it was applicable only to a small proportion of cases. Intrapelvic diathermy was most commonly used (1) to clean up a chronically infected cervix, and (2) to stimulate flagging ovarian activity. For chronic cervicitis it was a most valuable method, whether the infection was gonococcal, septic, or mixed. In some cases the cervix acted as a septic focus, giving rise to general malaise, often accompanied by "rheumatic" pains and lesions. In 100 consecutive cases complaining of rheumatic pains at a clinic he had found chronic cervicitis to be the commonest lesion (25 per cent.). Cases suitable for cervical diathermy included those with severe low backache, for which no adequate cause except cervicitis could be found; those with general signs of toxæmia; and those of salpingitis, of mild or moderate severity, without pus formation. The first attack yielded well to treatment. Often there was a recurrence, but he believed that diathermy was valuable in preventing any future attack. Before beginning this treatment accurate diagnosis was essential, as it was contra-indicated in the presence of any gross pelvic lesion. Its great advantage was that no anæsthetic was needed, and the patient could be ambulant.

Dr. Leonard Boys spoke of the value of the calcium, bromine, and iodine content of the waters of Woodall Spa in many gynæcological conditions.

Dr. J. S. Fairbairn sent a communication, which was read to the meeting, setting forth the range of physical exercises which he had found of great benefit, both before delivery and after, as a means of restoring function. Such exercises taught the woman the control of her musculature.

Mr. A. J. Wrigley supported the value of such exercises, from his experience at St. Thomas's Hospital,[1] provided that the patients were selected carefully; those with cystocele or a rectocele derived no benefit. His results from intrapelvic diathermy had not been quite so happy as those of Dr. Cumberbatch.

Dr. Agnes Savill recalled the work of her teacher, Dr. Samuel Sloan of Glasgow, who introduced into Britain the treatment of intra-uterine discharges and bleeding by galvanism. She described the successful results she had obtained with zinc and copper ionisation respectively in cases of vulvar eczema and acute gonorrhœal discharge. A shrunken state of the vagina and the vulva in elderly women, called by some leucoplakia, also responded well to diathermy.

Dr. Justinia Wilson said that most of the ordinary cases of dysmenorrhœa and much chronic pelvic discomfort associated with puberty and the menopause arose from inadequacy of the musculature, leading to malnutrition and defective lymphatic drainage. Coördination of pelvic muscles with due regard to the segmentation of the spinal column was thus of great importance. Neither light treatment nor diathermy could, of themselves, cure this muscular inadequacy or the congestion of the pelvic organs. She believed in the efficacy of infra-red rays, applied from a distance of 3 feet, to the abdomen.

Dr. Muriel Keyes (Harrogate) said that neither the profession nor the laity sufficiently recognised the usefulness of hydrological methods of treatment in certain gynæcological conditions. Routine spa treatment had a mental as well as a physical effect tending towards cure.

Dr. Philip Ellman spoke of chronic pelvic mischief in relation to chronic rheumatic joint disease. The two main groups of that disease were: (1) the toxic, infective, or inflammatory type; (2) the degenerative, non-inflammatory type. His work with Dr. Robinson on patients of the first type had given surprisingly good results, even in long-standing cases. In many women, one or two applications of pelvic diathermy had cleared up the condition. The second type of case he regarded as endocrinal, the arthritis being accompanied by little constitutional disturbance; the degeneration seemed to start at Heberden's nodes. These women tended to become obese and to show degeneration in other systems of the body. Most had ovarian dysfunction, with corresponding thyroid dysfunction.

Dr. Morris Johns agreed that the results of intrapelvic diathermy were excellent in the types of cases described, but whereas after surgical amputation or repair of the cervix the patient was out of hospital in a fortnight, with diathermy treatment extended over seven or eight months.

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[1] Some exercises for pregnant and puerperal women, taught in the massage department of this hospital, were described in The Lancet of Sept. 23rd, 1933, p. 731.

Dr. Cumberbatch, in reply, again stressed the importance of special skill in this treatment, and took exception to the estimate of seven months as the duration of the treatment; the duration was nearer one month.

MEDICAL WOMEN'S FEDERATION

At a meeting of this society held on Nov. 28th, with Prof. M. F. Lucas Keene in the chair, Dr. Jean Smith opened a discussion on

Constipation and Colic in Childhood

No one, she said, could fail to be impressed with the extreme frequency of these complaints. The stamp duty on patent medicines, many of which were purgatives, had increased in Great Britain from £43,692 in 1860 to £360,377 in 1914, representing no less than £2,000,000 spent by the public on patent medicines in that year. Intestinal peristalsis, although partly dependent on nervous control, was largely independent of extrinsic nerves, and the movements continued in excised portions of bowel placed in oxygenated Locke's solution. The vagus and the pelvic nerves stimulated peristalsis by their action on Auerbach's plexus, and the sympathetic fibres inhibited peristalsis. Intestinal contents, thyroid gland secretion, and various emotions such as excitement or fear, stimulated Auerbach's plexus and caused increased peristalsis; excessive stimulation produced abnormal peristalsis with colic and spasm. Colic might follow fright, emotional upset, or severe cold, and measures which lessened the irritability of the vagus, such as warmth, rest, and quiet, would alleviate colic. Stimulation of the sympathetic might explain the constipation said to result from the use of adrenaline in asthma. In the healthy breast-fed infant there should be two to three golden yellow, homogeneous, inoffensive stools in the 24 hours; the usual times of action were after the first morning feed, in the early afternoon, and again in the evening. In the bottle-fed baby, the more closely the food resembled breast milk the more closely did the stools resemble those of the breast-fed infant. The higher the protein content the more alkaline and formed were the stools; hence constipation almost invariably resulted when an infant was taken off the breast and put on artificial food, especially on cow's-milk mixtures. Sugar and fat were laxatives and might properly be used to correct constipation due to an ill-balanced diet.

Constipation in childhood might be divided into (1) colonic constipation and (2) dyschezia. Colonic constipation might be due to food poor in mechanical and chemical excitants. Although few people would risk putting a child of under 4 months on undiluted cow's milk, many infants were given dried milk mixtures made up in the same concentration as undiluted cow's milk, or even stronger, and this was one of the commonest causes of constipation at this age. Older children were often given a diet deficient in roughage and consisting largely of white bread, potatoes, and sugar. Anyone who had tried to work out an adequate diet for a family living on unemployment wage knew what a heart-breaking problem it was to include sufficient foods providing roughage. In all carnivoræ the intestinal tract was relatively short, the cæcum was never large and often absent, while the hind gut might be absolutely straight; in herbivoræ the hind gut and cæcum were capacious; and in the African monkey, which was chiefly vegetarian, the gut approximated to the human pattern, the capacious colic loop indicating the need for a supply of roughage. In nearly all cases of constipation in childhood due to inadequate roughage the deficiency could be made good by giving extra fruit and vegetables, especially prunes, apples, oranges, and green vegetables; and by substituting wholemeal for white bread. Colonic constipation might also be due to deficient ductless gland secretion, as in cretinism. Thyroid extract increased the frequency of bowel action in this condition, but it was irrational and dangerous to give gland extracts for constipation in cases which did not exhibit signs of hyposecretion. Deficient excitability of the intestinal mucosa was another cause of constipation, and resulted from the prolonged use of purgatives, or followed in the wake of acute enteritis. Weakness of the intestinal musculature might result from lack of bowel training, or follow rickets, anæmia, and fevers. Inhibition of motor activity occurred temporarily in association with painful conditions of the abdominal viscera, and prolonged inhibition occurred in Hirschsprung's disease. The diagnosis in Hirschsprung's disease was made by giving a barium enema, when the enormously dilated colon could be observed radiographically. Mild cases were relieved by massage and enemata, but in severe cases ganglionectomy offered the best hope of improvement.

Other cases of colonic constipation were those in which excessive force was needed to carry the fæces to the pelvic colon. Extreme bulk of fæces due to a heavy protein content and insufficient water to drink were common causes, and congenital strictures were sometimes responsible for the condition in the early weeks of life. Kinking of the colon was sometimes regarded as a cause, but the sigmoid colon was very large in the young child, and might take up a variety of positions. In a recent investigation of a large number of healthy children under 3 years of age no case of constipation was found, although 87·5 per cent. had a kinked type of colon.

In cases of dyschezia—the second great group of cases of constipation in childhood—there was inability to defæcate completely; the condition was commoner than was usually supposed, and would be diagnosed more often if rectal examinations were more frequently made. Disregard of the call to empty the bowel was the usual cause, and was influenced by such factors as late rising, hurried departure for school, and inadequate lavatory accommodation. Constipation was almost unknown in India, China, and Japan. The Indian mother supported the buttocks of her child on her big toes, so that he could defæcate between her feet, and taught him regular habits in this way from a very early age. In China the mother supported the child's buttocks in her hands, and held him erect with his back firmly against her breast, pressing his thighs against his abdomen; the position forced the infant to strain. In a few infants the defæcation reflex was weak, and in these cases the soap stick, beloved of the midwife, found its justification. Some infants suffered from colic and constipation as a result of getting too little food, and symptoms disappeared when the feeds were augmented.

Constipation was seldom a cause of other illnesses in childhood, but it was responsible for certain cases of vomiting in early infancy, and of flatulence and colic. A loaded colon and rectum might be the exciting cause of enuresis, and *B. coli* pyelitis was also associated with constipation. Before a line of treatment was adopted the training the child had received, his diet, and the character of the stools should be noted; pain on defæcation, or the presence of blood in the stools, suggested a tear of the anal mucosa or a small fissure. In all stubborn cases a rectal examination was important. If there was any suspicion of Hirschsprung's disease a barium enema would help. In obstinate cases of long standing, when dietetic and hygienic measures were only partially successful, laxatives such as cascara and liquid paraffin might be given temporarily. Apart from acute febrile illnesses and renal disease there were few conditions in childhood which called for the use of purgatives. It was difficult to improve on the advice of a well-known physician, given almost a century ago: "Everything in the shape of medicine ought to be given most sparingly, and only under professional advice, while even the medical adviser should consider twice before he gives a single dose of hydrarg. cum cret."

DISCUSSION

Dr. H. H. **Chodak Gregory** asked whether the "weekly dose"—her bugbear for 30 years—was as prevalent everywhere as in London. Mothers commonly gave their children a large dose on Friday or Saturday, but if the bowel was to act automatically why upset it once a week? In most poor homes there was limited lavatory accommodation, and in some cases it was easier for the children to form the habit of going to the closet after midday dinner. Some children had difficulty in spite of training, and in these glandular deficiency or poor coördination between peristalsis and relaxation of the colon must be considered. Training must not be allowed to become a fetish. One child who had been brought up very strictly was in such terror of not passing a motion daily that she developed an inhibition, and became so severely constipated that she had incontinence of fæces and resembled a case of Hirschsprung's disease. She recovered with careful treatment and training in hospital.

Dr. **Elizabeth Hunt** had also been impressed by the commonness of the weekly dose. She had found that almost every child with urticaria papullosa had been given syrup of figs, and she thought the commercial preparations must contain some drug giving rise to the skin condition. She did not approve the use of liquid paraffin: she had seen too many cases of pruritis ani associated with its administration, and she thought that a mineral oil which could irritate the skin could not be good for the mucosa.

Dr. A. H. **Nicoll** had found that constipation often improved if children were put on a time-table—up at 7, breakfast at 8, lavatory at 8.30, school at 8.45. Soap, she thought, should be used only as a last resort if at all; it was bound to act as an irritant, and it would be better to dilate the baby's anus with some other lubricant. If an infant had a normal motion every second day he could be left alone to develop regular habits.

Dr. **Octavia Lewin** said that she had found that if children were placed in the right position to defæcate they nearly always had a motion. She thought suggestion had an enormous influence; as she had once heard it oddly expressed, the physician should work side by side with the patient.

Dr. **Letitia Fairfield** mentioned the importance of a low lavatory seat; the child experienced considerable difficulty in defæcating if his legs were dangling. Children going off to school in the morning were liable to be fussed and anxious about their lessons, and some of them would be more ready to give their attention to defæcation at midday; a brick or a block of wood to be used as a foot rest often helped them considerably, and in schools the lavatory seats should be low. Some mothers thought it indecent to talk about bowel action, and consequently the children had no vocabulary to tell the mother if anything was wrong.

In reply, Dr. **Smith** said that the weekly dose was extremely prevalent, and when an attempt was made to keep records of its frequency in hospital cases there were found to be literally no exceptions. It was true that some children could acquire the habit of emptying the bowel at midday, but the gastrocolic reflex was more powerful in most people after the first meal of the day. She agreed that lavatory accommodation was often unsatisfactory, and small children were sometimes afraid of falling through the seat. She had never seen any evil results from the use of the soap stick, which was convenient and familiar to mothers.

At a meeting held on Dec. 14th, Prof. M. **Lucas Keene** presiding, Dr. Janet K. Aitken read a paper on

Treatment in Certain Types of Heart Disease

The treatment of congenital heart disease, she said, could only be palliative in character. In juvenile rheumatism preventive treatment might be expected to be of great importance; but results from investigations, with a view to prevention, into suggested contributory causes, such as damp, rat-infested areas, certain soils, diet, and infection from close contact, had so far been disappointing. The work of Schlesinger, Sheldon and Collis, Glover and others suggested that rheumatism was an allergic response in individuals sensitised by previous infection with certain strains of hæmolytic streptococci. Dr. Aitken discussed the value of tonsillectomy in the treatment of juvenile rheumatism, giving the conclusions of Leonard Findlay and his co-workers, and those she had reached from statistics obtained at the Kensington supervisory clinic. These statistics suggested that in those having healthy tonsils the progress of the disease is least severe. In those with unhealthy tonsils a preliminary complete tonsillectomy might modify the severity of cardiac complications and render the child more free from relapses; this applied to choreic as well as arthritic manifestations. Dr. Aitken discussed the treatment of established juvenile rheumatism and chorea, describing a case to show how long the active phase might last in a child whose signs and symptoms had never been severe. She discussed the medical treatment of thyrotoxicosis, of which the most important manifestation was cardiac damage, but, in agreement with Cecil Joll, advised operation unless the improvement was very marked in a few months and the patient could be freed from anxiety either economic or otherwise. Since iodine therapy caused only a temporary alleviation of symptoms and this improvement often could not be repeated, it was wise to reserve this benefit to be used in preparing for operation. Dr. Aitken described the general treatment of acute cardiac failure. She mentioned a case of Dr. Strickland Goodall of acute heart failure with marked œdema, in which the administration of large doses of cane sugar had been successful where other measures had not, the chart showing that the urinary output increased proportionately to the amount of sugar given. She believed in venesection or the application of leeches in certain cases. She discussed digitalis therapy and the value of morphia, quinidine, adrenaline, camphor, and a few other drugs, and referred briefly to the treatment of acute œdema of the lungs, cardiac asthma, and coronary thrombosis. Rest in the treatment of heart disease implied mental as well as physical rest; mental strain must always be relieved if in any way possible.

Miss D. W. HALL pointed out that the portal of entry of the hæmolytic streptococcus might be through the nasal mucous membrane as well as through the tonsils.

Dr. DORIS ODLUM maintained the importance of treating the psychogenic factor in thyrotoxicosis; she believed that there were two types of cases, in one of which the psychic trauma was predominant.

Dr. D. C. HARE pointed out the danger of delayed operation in certain cases in which the nervous manifestations were alleviated by medical treatment, but the cardiac damage was progressive. She suggested that too large doses of iodine were often given; she had had good results from 1 minim of Lugol's iodine three times a day.

In reply, Dr. AITKEN agreed that the neglect of an unhealthy nasal condition might account for some of the disappointing results from tonsillectomy. Psychic trauma was an important ætiological factor in thyrotoxicosis, but once the thyroid secretion had been altered, psychotherapy was not likely to effect a cure. She rarely gave iodine herself in the early stages, in order to reserve its beneficial action for the period before operation.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

AT a meeting of this society held in London on Dec. 14th Dr. JAMES YOUNG took the chair, and a paper entitled

Purpose and Some Neuroses

was read by Dr. F. G. LAYTON. It is the job of the unconscious mind, he said, to keep its host going, and upon this text he built his thesis that, all neuroses being purposeful, they are in essence protective. This characteristic of neuroses was demonstrated particularly in unravelling the twisted threads of industrial accident when, after the effects of physical trauma had passed, there remained the effects of the mental trauma. If this was unrecognised much injustice was likely to be done, and not infrequently was done. Those to whom the dogma of purpose in neurosis was distasteful preferred to regard the post-accident neurotic as often a malingerer, and talked of "compensation neurosis." Such talk was dangerous, and should be regarded with suspicion. The task of the physician was constantly to ask why; to seek the purpose underlying the train of symptoms presented. Thus would he learn something of the patient as a whole and get nearer to being able to help him.

The *Tyranny of the Invalid*

Dr. O. H. WOODCOCK followed with a paper pointing out that the discomfort and suffering of illness are rarely confined to the patient, and that there is no surer method of dominating a sympathetic household than by the exhibition of disease. Not only the neuroses but also the attacks and exacerbations of disease with discoverable pathological changes occurred opportunely when the patient craved extra attention, wished to evade a duty or to excuse faulty performance or failure. Even infants soon learned to play upon the fears of an anxious mother by sudden variations of the action of the bowels or the development of convulsions when thwarted. At the school age colds and fever might be opportune for escaping examinations and difficult menstruation might be an excuse for neglect to take a share in housework. Even normal pregnancy was a useful lever to secure the dominance of a husband and the ills of the puerperium could be exploited to maintain it. Men could and did advertise headaches and exhaustion so that they might be petted and comforted at the end of a business day or to explain a lack of success in it. Lastly, old age all too frequently imposed on the next generation a yoke by virtue of its decrepitude, and many a devoted son and daughter had declined into soured middle age, too pre-occupied with the care of the parent to take his or her rightful place among contemporaries. The demand of the invalid for attention rarely allowed solitary suffering—there must be an audience to suffer too. So tenacious was his hold on his imagined rights, that sometimes he would die rather than surrender them.

In every case of illness, Dr. Woodcock concluded, we are justified in asking ourselves: What is the patient gaining by this?

LIVERPOOL MEDICAL INSTITUTION

AT a pathological meeting of this institution on Dec. 7th, with Dr. H. R. HURTER, the president, in the chair, a paper on

Urochrome in Health and Disease

was read by Dr. C. L. G. PRATT. After summarising present knowledge of the chemical composition of the pigment, he presented evidence to show that the amount excreted per day was fairly constant and independent of the diet. In considering its possible precursors in the body, he maintained that its origin from hæmoglobin was improbable. There was reason to suppose that the suprarenal gland, and possibly the liver, were concerned in the metabolism of the pigment. In general, the daily output rose with any physiological or pathological increase in metabolism. Dr. Pratt regretted the lack of attention paid to a problem which was easily susceptible of approach from a clinical standpoint.

In the discussion which followed, Prof. J. H. DIBLE suggested a possible relationship between fat pigment and urochrome, pointing out that Dr. Pratt had referred to cyclical vomiting and other conditions involving starvation as being associated with an increased urochrome excretion. Since increased breaking-down of fat was also common to these conditions, Prof. Dible asked whether Dr. Pratt had considered the possibility of urochrome having such an origin.

METROPOLITAN HOSPITAL APPEAL.—At a meeting at the Mansion House last week the Lord Mayor of London launched an appeal for this hospital, of which he is president. Mr. Lionel de Rothschild, the treasurer, explained that the hospital had usually been able to balance its accounts by local support, but now that it is situated in Kingsland-road, where the inhabitants are extremely poor, that help is lacking. The recently built nurses' hostel and many unexpected expenses had caused a heavy debt, and £30,000 is required at once. A committee was formed to consider the best means of raising the money.

REVIEWS AND NOTICES OF BOOKS

Growth and Gonad-stimulating Hormones of the Anterior Hypophysis

Vol. 11 of the *Memoirs of the University of California*. By H. M. EVANS, K. MEYER, and M. E. SIMPSON, in collaboration with A. J. SZARKA, R. I. PENCHARZ, and R. E. CORNISH of the Institute of Experimental Biology, University of California, and F. L. REICHERT of the Halsted Laboratory of Experimental Surgery, Stanford University Medical School. Berkeley: University of California Press. 1933. Pp. 446. $10.

THIS monograph is the eleventh of the now famous series of monographs issued by the University of California. Many distinct discoveries have first been published in this series; for example, the classical experiments of Evans and his co-workers on the anti-sterility vitamin E appeared in Vol. 8. Vol. 11 is divided into 14 sections. The first deals with the anterior hypophyseal growth hormone, and contains accounts of the preparation of this hormone with such full details of laboratory procedures as would be unacceptable to the editors of serial publications. It is just these details which are of such great value to the laboratory worker, and their inclusion exemplifies the value of this type of monograph. The second, a very long section, deals with the preparation and properties of extracts containing the gonad-stimulating hormone. This contains a full account of the authors' researches on this important substance. Every possible source of the material has been examined, and interesting comparisons of the properties of extracts from blood, the urine of pregnancy, and placenta are to be found. Sections 3–8 deal with the biological properties of these compounds; section 9 is concerned with experiments on the inter-relationship between the hypophysis and the adrenals, whilst sections 10 and 11 deal with the metabolic alterations caused by administration of these compounds. The last three sections discuss the administration of combinations of hormones in animals which have undergone various types of ablation experiments.

This is a fine work. The method of presentation from the point of view of printing and production is beyond praise, whilst the photographs, microphotographs, and diagrams are of high order. Pioneer laboratory experiments are described in sufficient detail; and, finally, the authors have not neglected to pay due deference to the work of others. The bibliography might well be regarded as a model.

History of Malaria in the Roman Campagna from Ancient Times

By the late ANGELO CELLI. Edited and enlarged by ANNA CELLI-FRAENTZEL. With a preface by Sir ALDO CASTELLANI. London: John Bale, Sons and Danielsson, Ltd. 1933. Pp. 226. 10*s*. 6*d*.

ON his death, Prof. Angelo Celli left a great mass of material dealing with a subject to which he devoted much interest in his later years; and his wife has continued his work with great piety.

The study of 25 centuries of history and prehistory show in the Roman Campagna a series of waves of prosperity and depression, and it is the aim of this work to show that the main recessions were due to intervening waves of malaria, and that the Popes during the thousand and fifty years from Zaccharias to Pius VII. were strenuous in repeated efforts to overcome the desolation which surrounded and even invaded Rome. But if malaria was Rome's enemy it could also be her friend and defender. For example, in 1167 Frederick treated with contempt the Pope's excommunication, and laid siege to Rome in the summer. Thereupon, as the King's Chronicle of Cologne says, illness struck him and his followers like a thunderbolt and he fled, leaving innumerable dead not only before Rome but marking his whole line of retreat, so that Lombardy seized this chance to throw off the German yoke.

Celli's work had been completed only up to the time of Ross's great discovery and its confirmation in Rome, and his wife in a few pages sketches the present prosperous Campagna. In this country there will be regret that there is no mention of Manson's crucial experiment which comes inevitably to our minds when we think of that tract of land. The book appropriately ends with expression of the conviction that modern civilisation, based on the application of modern scientific discoveries, will not be swept away as were its predecessors. In making these discoveries and in devising their practical uses Angelo Celli played a fine part.

Constitution and Health

By RAYMOND PEARL, Professor of Biology in the Johns Hopkins University, Baltimore. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1933. Pp. 97. 2*s*. 6*d*.

Prof. Raymond Pearl here describes an investigation conducted by Miss Barbara Betz and Dr. J. R. Miner, in the department of biology of the school of hygiene and public health of the Johns Hopkins University, on the relation of bodily constitution and health. A sample of 290 women was classified, according to bodily constitution, as asthenic (a fifth of the total), pyknic (a quarter), and intermediate (just over a half) in bodily build. Their general health was also investigated and classified as very good (never ill), good (minor ailments only), fair (average amount of sickness), poor (frequently sick), and very poor (an invalid throughout life). There was found to be no marked association of good health with somatic conformation. In the sample, the women of intermediate trunk habitus had experienced slightly poorer general health than either the asthenics or the pyknics. And by an insignificant margin, those of asthenic build enjoyed better health than the pyknics. Prof. Pearl concludes that differences in bodily habitus are, among these women, not significantly correlated with differences in general health.

Practical Hæmatological Diagnosis

By O. H. PERRY PEPPER, M.D., Professor of Clinical Medicine, University of Pennsylvania; and DAVID L. FARLEY, M.D., Physician to the Pennsylvania Hospital, Philadelphia. London: W. B. Saunders Co., Ltd. 1933. Pp. 562. 30*s*.

THE first part of this book, which is devoted to "the components of the blood, the methods of their study, and the significance of the results obtained," is excellent. The authors have kept clearly before them just what they wished to accomplish, with the result that they have produced some 350 pages of a substantial value to the medical student and practitioner. There are one or two omissions; the information to be derived from a study of the Price-Jones curve receives no mention, and the description of the uses of spectroscopy in such conditions as carbon monoxide poisoning and methæmoglobinæmia is poor. This portion of the book, however, containing most of what the student or practitioner who has no wish to make a special study of the blood requires to know, by itself would have made an invaluable text-book. The value of the last section of 100 pages which is devoted to "the hæmatology of diseases not primarily of the blood" is doubtful. It consists of an alphabetical list of diseases commencing with "abscess" and passing on through "eczema," "edema," and so on to "yellow fever" and "zoster." There are undoubtedly people who like this sort of thing, but it is a question verging on the moot (as Mr. P. G. Wodehouse says) whether they should be encouraged. Anyone who has mastered the general principles set out in the earlier sections should be able without reference to an alphabetical table to form some sort of an idea of the blood picture in the diseases tabulated. Such schematisation, moreover, serves to foster the heresy—anathema to clinical pathologists and by no means accepted by the authors—that it is possible in conditions other than "blood diseases" to make a diagnosis from examination of the blood alone.

Sexual Regulations and Human Behaviour

By J. D. UNWIN, M.C., Ph.D. London: Williams and Norgate. 1933. Pp. 108. 7*s.* 6*d.*

IN a preface Dr. Unwin states that during the last seven years he has conducted an inquiry into the effect of different sexual regulations on human behaviour; that the full results of this investigation are to be published in the near future; and that this short volume is an abstract of the conclusions which will later be presented in greater detail. The interesting thesis is here advanced that the mental and social energy through which, in the past, civilisations have evolved from barbarism is derived from the compulsory sacrifice of organic desires. If there is no prenuptial continence a society will display little energy; and if, on the other hand, the members of any society are compelled to be prenuptially chaste, they will display considerable energy. The amount will depend on the intensity of the continence imposed by post-nuptial regulations, the post-nuptial opportunity of the female being a more important factor than that of the male. "The energy will be least when neither party to a marriage is compelled to confine his or her sexual qualities to the other during their mortal lives; it will be greater when the female knows only her husband, even though he is free to have relations with other wives or women; it will be greatest when, throughout his life, the male, as well as the female, is compelled to confine himself to one partner." In the last case sexual opportunity is reduced to a minimum, and the cultural height reached by a society will depend not only upon the complete reduction of its sexual opportunity, but also upon the length of time during which it preserves its austere regulations.

This general thesis is supported by an abundance of anthropological and historical evidence. In fact the author bases his contention on an examination of 80 uncivilised societies as well as on the historical records of the Sumerians, Babylonians, Hellenes, Romans, Moors, Anglo-Saxons, and English. The attitude adopted throughout is ethically neutral. Nowhere are expressed moral judgments on the behaviour of the peoples examined. The author confines himself to tracing the effects of restrictions of sexual liberty, imposed by different peoples at different periods, upon their later cultural evolution. The argument is clearly of importance for the historian, the moralist, and the statesman, and Dr. Unwin's next work promises to be of great interest.

Modern Inhalation Therapy

By C. H. AUTY, M.R.C.S., Medical Officer No. 2 District, Willesden. London: William Heinemann, Ltd. 1933. Pp. 66. 3*s.* 6*d.*

THIS small brochure is the work of a general practitioner who, having employed inhalation therapy for a variety of conditions and being convinced of its beneficial effects, wishes to induce his colleagues to give similar methods a trial. Dr. Auty does not claim that inhalation is a cure-all, but says that he has found it far more satisfactory in many cases than any other method of treatment tried during his 40 years of experience. In addition to administering such substances as adrenaline, carbolic acid, creosote, ephedrine, and iodine by means of an Apneu apparatus for the relief of various chest diseases, he recommends its employment in a variety of other conditions in which its use would appear somewhat less rational. He has treated anæmia with an inhalation containing iron and strychnine which "makes the patient feel better almost at once." Other diseases which he has treated by inhalation therapy include various cardiac diseases, chilblains, gout, arthritis, and even prostatic enlargement. His enthusiasm is apt somewhat to overbalance his judgment, but his little book will prove a useful guide to practitioners who wish to try inhalation therapy.

Prophylaxe und Therapie der Infektionskrankheiten und Idiosynkrasien

mit spezifischen und unspezifischen Mitteln. By Dr. phil. et med. BRUNO BUSSON. Vienna: Julius Springer. Pp. 237. R.M.18.60.

Dr. Busson, who is the director of the State serum institute at Vienna, provides a well-informed account of the present position of the prophylaxis and treatment of infective disease and of those diseases generally classified as "allergic." The scientific principles which underlie this branch of medicine are clearly described and serve as an introduction to what is almost an encyclopædia of those methods of prophylaxis and treatment which depend upon the use of sera, vaccines, and non-specific protein material. Dr. Busson is not free from the optimism which has carried therapy on these lines somewhat further than is justified by its foundations, but it must be admitted that he makes earnest if not always consistent efforts to treat his subject rationally. The brief description which he gives of the composition, properties, and pretentions of numerous "serological" preparations which are or have been in vogue will prove useful even to the professional serologist, to whom clinicians often turn for information on proprietary preparations which he may be ill-equipped to give. The book is addressed to practitioners, but it should be used with caution by those without specialised knowledge. The long section on non-specific therapy is good and is as rational as the present state of that branch of immunology will allow.

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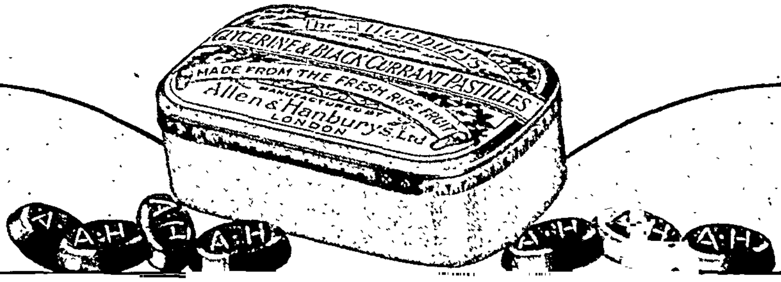
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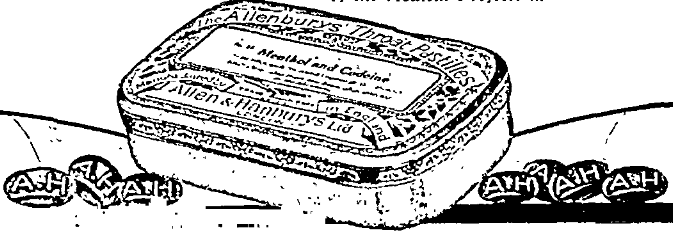

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See also pp. 18 & 19

THE LANCET

LONDON: SATURDAY, DECEMBER 30, 1933

MALIGNANT DISEASE OF THE BRONCHUS

Our knowledge of cancer originating in the bronchus has increased greatly in recent years as the result of improved methods of examination, notably by bronchoscopy and by skiagraphy, assisted by the introduction of lipiodol into the bronchial tree. As would be expected, more cases have been correctly diagnosed during life, but there is no certainty that there is any real increase in the incidence of the disease. No doubt many cases diagnosed as cancer of the lung or pleura actually originated in a bronchus, and even in post-mortem examinations of advanced cases the true site of origin of such a growth may easily have been overlooked. Mr. F. C. Ormerod has recently published[1] his experience of a series of 27 cases, of which 23 were proved by biopsy and 2 by autopsy; in the remaining 2 the clinical diagnosis was so certain as to justify their inclusion. Males are known to be attacked more frequently than females, but Mr. Ormerod's statistics, 23 males to 4 females, show a greater preponderance than usual; more than two-thirds of the cases occurred between the ages of 40 and 60, the youngest being a woman of 27, while the oldest, also a woman, was aged 74; the right side was affected in 15, the left in 12 patients. Of symptoms, cough is always present, and is nearly always accompanied by sputum, usually of a mucopurulent character; there was some degree of hæmoptysis in 21 patients. This may be profuse in the later stages, and in two cases in this series was the immediate cause of death. Dyspnœa on slight exertion was a striking symptom in 21 cases, and was often pronounced when only a comparatively small area of lung was out of action. Three patients complained of hoarseness, and in 2 of these the left cord was paralysed by implication of the recurrent laryngeal nerve. Pain was present in 15 patients, most often as an ache referred to the interior of the chest on the diseased side.

The clinical signs of cancer in this region are those of obstruction of a bronchus, usually with atelectasis. In partial obstruction there may be an expiratory wheeze with moist sounds in the lung below; in complete obstruction the signs are dullness on percussion, absence of breath sounds, and sometimes increased vocal conduction; the heart and mediastinum may be displaced, and the movements of the corresponding half of the diaphragm reduced, when there is massive collapse of the lung. X ray examination shows reduced mobility and displacement of the diaphragm and a shadow in the tissue of the lung which is due partly to the growth and partly to collapsed lung, the two being difficult to distinguish. After the introduction of opaque oil, the skiagram shows the upper margin of the growth, its outline in the bronchus being nearly always convex; a fusiform shadow is probably due to inflammatory stenosis. Bronchoscopy reveals certain characteristic features; the bronchial mucosa is less irritable than in cases of inflammatory disease, and there is accordingly less tendency to cough on examination. The growth is usually nodular, of the same colour as the normal mucosa, and its site of origin from the bronchial wall can be plainly seen. It is often of a firm consistence, even hard enough to make removal of a portion for bioscopy difficult; but in advanced stages may be so soft and friable that pieces are coughed up. Pathologically the carcinoma is frequently of the squamous-celled variety; in other cases there are masses of columnar cells or, again, of small ovoid cells. These ovoid cells were once believed to represent the oat-celled sarcoma of the mediastinum, but are now held to be carcinoma of the lung. After chronic inflammation the bronchial mucous membrane shows a marked increase in the cells of the small ovoid layer with, in advanced stages, a tendency to formation of masses of squamous epithelium; it is therefore suggested that all the different types of carcinoma arise from the layer of small ovoid cells. No specimen has been observed which would suggest that the ciliated columnar cells of the bronchus or the flattened epithelial cells of the alveoli give rise to these growths. The squamous-celled tumours show a tendency to degeneration with formation of cavities. Metastases occur commonly in the mediastinal glands, from which the tumour may invade the hilum of the opposite lung; they are frequent also in the suprarenals, liver, pancreas, brain, and almost any organ. Aspiration of fragments into the bronchus of the opposite lung may give rise to secondary deposits. If the growth extends to the pleura, its whole surface may become studded with deposits, or a continuous sheet of carcinoma may envelope the lung; such cases have been erroneously described as primary tumours of the pleura.

In treatment, removal of a small semi-pedunculated tumour has occasionally been possible by endoscopic methods, but radiation must be employed afterwards. Lobectomy has been performed in a few carefully selected cases at the Brompton Hospital by Mr. J. E. H. Roberts and Mr. A. Tudor Edwards; the disease must be limited to one lobe and must be so situated that sufficient lung tissue can be left to secure closure of the main bronchus; secondary deposits in mediastinal glands are a contra-indication. Most of the cases in Mr. Ormerod's series were treated by radium emanation applied through the bronchoscope in a special container. Treatment by the radium bomb has been very disappointing, for the distance of a growth in the lung is too great for success with any of the masses of radium used in this country. Deep X ray therapy has given some improvement in a few cases, especially in the upper lobe. Mr. Ormerod holds that the results of treatment are unsatisfactory owing to the advanced stage in which most cases are seen. Complete disappearance of signs and symptoms is reported in one of his patients, treated six months previously; another is alive and well after two years, and several have improved. Even this measure of success is gratifying in connexion with intrathoracic growths, for these were until recently regarded as hopeless, whether the œsophagus or a bronchus was the site.

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[1] Journal of Laryngology, November, 1933, p. 733.

A few days ago we were able to record the pioneer work of Prof. GREY TURNER on cancer of the œsophagus. Mr. ORMEROD is working on an organ just as inaccessible. It is clear that intrathoracic surgery affords ample scope for bravery.

THE CALDECOTT COMMUNITY

THE discussion of the functions and possibilities of nursery schools in our last week's issue (p. 1432) recalls the achievements of one of these schools which has undergone a remarkable adaptive evolution. As long ago as 1911, at the foundation of their nursery school at St. Pancras, Miss P. M. POTTER and her fellow-workers adopted a passive rather than an active attitude in their relation to the children, and sought to encourage individual rather than collective effort. Their impulse to awaken and maintain in the children of working-class parents the independence of spirit and joyous sense of security which is associated with a happy nursery led them to keep the children on till the ages of 7, 8, and even 9. From the first year of its existence arrangements were made by the Caldecott Nursery School to send the children to the country for a month, and it was the mental and physical effect of these holidays which convinced the honorary directors, Miss POTTER and Miss L. M. RENDEL, and the parents, that even under the most favourable conditions a day school in London could not adequately fulfil their conception of healthy child life. The courage that led them in 1917, when the country was still at war, to rent a house with seven acres of ground at East Sutton, Kent, was justified by the response of parents and of the friends of the Caldecott Community, as the venture was now called. The school at East Sutton opened with 30 children, 25 of whom had been in the Community for several years, and, as the only boarding school in this country for working men's children, it began to attract attention in educational circles. Whereas in the public elementary schools the classes are large, the teachers few, and the curriculum rigid, here the staff were numerous and their self-imposed duties included coöperation in the activities of a household which must have completed its own chores before the intellectual work of the day can begin, and which depend to some extent on the cultivation of produce from a home farm for its maintenance. Their reward, to quote from a report of the Community's activities, is the joy of watching the freeing of personality in order that personality, nurtured in communal life, may desire and acquire the power to serve. The school, which in 1925 sought and obtained recognition as efficient by the Board of Education, had by this time been forced to find larger premises; in that year 55 applications for admission were received, while only 15 new members could be accommodated.

The experiment was a success. The children went in the holidays to homes widely differing from the one in which they spent the terms and adjusted themselves with little difficulty; for those who had no suitable homes hospitality was sought among the friends of the Community. Selection from among the applicants became year by year more difficult, and in 1929 a decision was reached which was the natural outcome of the groping, largely undefined ideal for which the Community stands. In their attempt to give a sense of freedom and security to less fortunate children of the country, they had selected at first those less fortunate in material things, children from poor but normal homes. But gradually, from the nature of the applications received, the council realised that it is not the child from the normal home, however poor, that knocks irresistibly for admission, but the one with an abnormal home. The function of the Community became more definite: to provide a home school for normal children, irrespective of class or denomination, whose homes are in any way abnormal, unhappy, or unsuitable.[1] These are rightly held to need more than any others that balanced serenity of outlook which comes of a wise discipline in an environment not too institutional. No adequate provision is at present made by the State or by voluntary social organisations for the child who, owing to its home conditions, is in danger of becoming socially maladjusted. It is difficult to estimate how many of those who later become misfits, neurotics, or criminals come from broken homes, that is, homes where for some reason normal relationships with and between the parents are not obtained; but such information as is available suggests that this is one of the fertile sources of maladjustment. Illegitimate children, those whose parents are divorced or separated, or, perhaps still worse, live in continuous friction rather than face open rupture; step-children, even when kindness and consideration are shown by the newcomer; orphans and children of unstable parents—all these are liable to lose confidence in life. Even chronic illness may lead to partial or total disorganisation of the home and often to an unsuspected state of anxiety and fear among the children which reacts adversely on their development.

Medical men who know of such children—and who does not?—and are doubtful how best to help them should make an effort to visit the Community, now established at The Mote, Maidstone, Kent, and form their own impression of its atmosphere. There are now 70 children in residence of ages from under six to sixteen. Those over eleven live in the Community but attend the senior, secondary, or technical schools in the neighbourhood. A small group, not more than 10, known as the "home children," consists of intelligent youngsters presenting special difficulties—some are sent by child guidance clinics. They go to school with those of their own age, but have their own house-mother, playroom, and bedrooms; their day is regulated by the house-mother and all questions of their discipline and management are referred to her. As they learn to adjust themselves to life, they return into the general life of the Community. An analysis of 46 children who have passed through the Community is inserted in this year's report; the girls include a doctor, a nurse, a domestic servant, a shop assistant; the boys, a draughtsman, a waiter, a laboratory assistant. Only two boys are out of work; of these alone unsatisfactory reports have been received. All these children have had a hard struggle for existence, and many are known to have shown courage and resourcefulness in the teeth of poverty and other difficulties. These qualities may well have been fostered by the successful efforts of the Community itself not only to survive but greatly to expand without adequate endowment.

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[1] The parents' or guardians' [illegible] of £1 a week for each child. This [illegible] nnual expenditure, the rest being [illegible] and donations in response to appeals.

CONSTITUTION AND DISEASE

It is reasonable to suppose that, just as human beings differ innately in their physical and mental characteristics, they differ innately in their capacity for health and their resistance to disease. To the older writers this was a mere truism, but in the last half century, with the growth of pathology and bacteriology, the problem of the "diathesis" has been largely neglected, if not discredited, and until lately attention has been concentrated on the external agents of sickness. So far, however, bacteriology and immunology have not provided a solution of the problem of differences in reaction of persons exposed apparently to an equal risk of infection—why one escapes and one succumbs. If the more important factor is an acquired immunity these sciences may eventually provide a measure of this in each infection, but, on the other hand, it may be that "the summation of the morphological, physiological, immunological, and psychological characters with which an individual is born" largely determines his successful or unsuccessful reaction to his environment. Certainly of late years there has been a revival of interest in these inborn characteristics in relation to disease and a realisation that such constitutional factors may be of as much interest and as much importance as the maladies themselves and their causative agents.

The quotation above is taken from a paper[1] describing an elaborate statistical study of this aspect of disease, undertaken by Dr. MATTHEW YOUNG in the Institute of Anatomy, University College, London. His material consists of anthropometric measurements and observations of physical characters made by Dr. A. BONNARD (working under the Medical Research Council) on 1212 children between the ages of 6 and 12 years attending the Hospital for Sick Children, Great Ormond-street. Of these children, 368 were attending the special clinic for asthma, 459 the special clinic for rheumatism, and 385 the out-patients' department for minor or trivial ailments but with no history of rheumatism or asthma or obvious impairment of general health. This last group serves as a control to the asthmatic and rheumatic. Some 30 anthropometric measurements were made of each child, and the hair and eye colour were noted, as well as the posture and bodily habitus. Distinguishing sex and three age-groups—namely, 6–8, 8–10, and 10–12 years—the comparisons between the three sets of children fall into three groups: (1) the absolute measurements, such as stature, length of arm and leg, girth, and diameters of the chest; (2) percentage ratios or indices which give expression to the shape or form or relative proportions of the different parts of the body, such as the ratio of stem length to standing height, cephalic, and facial indices; and (3) the qualitative characters, such as colouring and posture. Consideration of the frequency distributions, the mean values and the variabilities of the absolute physical measurements leads to the conclusion that the contrasted groups of asthmatic and rheumatic children show no significant difference in their general dimensions, and that both groups in comparison with the control series also reveal no differences which are sufficiently consistent at the various ages and in the two sexes to be regarded as indicating a real divergence from the normal. Similarly with regard to the indices there is no definite evidence that the children suffering from the two diseases differ from each other or from the normal children in morphological type. On the other hand, certain significant differences are suggested by the figures relating to pigmentation. In distribution of hair colour the rheumatic children do not differ from the normal, but both the asthmatic boys and girls show a relatively greater excess of the blonde-haired type, and a greater deficiency of the dark haired, than might reasonably be expected to have arisen by chance. In eye colour, however, neither the asthmatic nor the rheumatic children can be said to differ from the normal, and the same equality is found in the distribution of grades of posture, the proportions of relatively long and slender and short and thick-set types, and in the form of face. The distinction between these types—slender or asthenic, thick-set or pyknic—is set out convincingly by Prof. RAYMOND PEARL in a recent study of the relation between constitution and health reviewed on p. 1485 of our present issue. He also comes to the conclusion that in the group of women studied bodily habitus was not significantly correlated with general health. Dr. YOUNG's own conclusions are set out thus:

> "The differences in the three groups of children, the asthmatic, the rheumatic, and the normal, in respect of the aggregate of physical characters brought under review are relatively so slight that they cannot be considered to support the view that asthmatic and rheumatic children really differ on the average from one another or from the general population of children from which they are drawn in bodily conformation or physical type, though they may possibly, indeed probably, differ in other constitutional traits."

The verdict of not guilty does not detract from the value of an obviously very laborious and careful piece of work, and will not, it is to be hoped, discourage the collection of similar data concerning sufferers from other diseases.

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[1] Jour. of Hyg., November, 1933, p. 435.

ANNOTATIONS

THE BED-BUG TAKEN SERIOUSLY

"As a rule the proboscis is folded back into a groove which . . . gives the insect a demure and even a devout expression: it appears to be engaged in prayer, but a bug never prays."

THE quotation is from the late Sir Arthur Shipley's "Minor Horrors of War," and illustrates the amusing side of the bed-bug to a zoologist. But jokes about bed-bugs lose their point for those who have to dwell with them. At a discussion held last June,[1] medical officers of health and sanitary inspectors regarded despairingly the methods of disinfestation at present available. Fumigation with sulphur dioxide and even hydrocyanic acid gas is unsatisfactory; sulphur fumigation requires to be repeated more than once, because the eggs are resistant to sulphur dioxide, and the use of hydrocyanic gas makes it necessary to dispossess not only the residents, but tenants of adjoining houses for anything up to 24 hours. Dr. C. Killick Millard, in a recent article,[2] describes the results obtained in Leicester with hydrocyanic acid gas as hardly satisfactory; in seven houses awaiting demolition the bugs disappeared following fumigation, but as the houses were vacated shortly afterwards, it is impossible to say whether disinfestation was permanent. In two out of three occupied houses treated, bugs reappeared within a few weeks. Dr. Millard would like to be able to condemn every bug-infested house as unfit for human habitation, and to throw the onus of disinfesting it jointly on the owner and occupier; if they failed to disinfest it in a reasonable time, he considers the house should be scheduled for demolition. The problem of preventing the infestation of new housing estates when tenants move in from infested areas has been met in Leicester by detailing a staff of workers to spray furniture and other household goods with paraffin on several successive days; all bedding is removed, passed through the steam disinfector, and delivered directly to the new house. In Erith the problem has been solved more simply[3] by transporting the family goods in a motor van with a detachable body which could be rendered gas-tight and disinfested with hydrocyanic acid.

The Department of Health for Scotland has recently published a pamphlet[4] on the prevention of house infestation by Dr. W. C. Gunn, which introduces a more hopeful note into the bed-bug saga. Dr. Gunn admits that bugs may so penetrate the structure of houses that demolition becomes the only efficacious remedy, but he believes that intractable infestation of new housing properties can be avoided by unremitting attention to cleanliness, which, of course, it is the job of the housing officer to inculcate in the new tenants. Houses occupied by indifferent tenants should be visited at short intervals until the necessary standard of cleanliness has been achieved. Nor does the task of disinfesting a proportion of old dwellings appear to be insurmountable in Scotland. Knowledge of the life-history and anatomy of the bug is a help to those who have to deal with it, as Dr. Gunn tellingly illustrates; from the experiments he quotes it is evident that an individual bed-bug can live for four years and upwards, retaining its fertility until late in life. Intervals of two or three months between feeds do not prove fatal or affect its vitality. In one experiment two unhatched eggs were left neglected in a Petri dish when the rest of the brood was removed in October; the following April the dish was opened and there were two bugs, apparently newly hatched, showing either that eggs may lie unhatched but living through the winter, or that the young bug hatched in late autumn can survive through the winter entirely without food. Moreover, the rate of development of the young bug may be slowed when times are lean, to be completed when the opportunities of feeding improve; an infested house may stand empty for months, but surviving bugs will emerge when the new tenants arrive. The inspector must be able to recognise the newly hatched larva and the half-grown nymph as well as the adult bug if he is to be successful in his task. When the house is unoccupied, Dr. Gunn advises that picture rails and skirting boards should be removed, and infested wallpaper stripped. The rooms can then be sealed and fumigated, a second fumigation being performed ten days or a fortnight later, when any remaining eggs may be presumed to have hatched. Afterwards the house is cleansed with soap, warm water, and soda, the woodwork being scrubbed before it is replaced; and finally the walls are distempered and the ceilings whitewashed.

In an occupied house the procedure is essentially the same, but is complicated by the presence of furniture. Picture backs, particularly, provide a favourite home for the bug, and infested furniture needs special attention to the crevices and joints. Permanent success, he points out, depends less on the fumigation than on subsequent cleansing operations, and tenants in both old houses and new must learn to rely not on disinfectants to do their work for them, but on methodical house cleaning and soap and water properly applied. The main duty rests on them, and, as Dr. Gunn remarks paternally, "they must be guided and watched or assisted, and if need be prosecuted." That public opinion is likely to be a potent factor is also the view[5] of Dr. John Macmillan, medical officer of health for Woolwich. The disinfecting van at one house may well spur the occupants of neighbouring houses to greater effort in "de-bugging."

THE WINTER'S MEDICAL PROBLEMS

NEARLY a whole issue of one of our German contemporaries[6] is devoted to the medical problems to which the winter may give rise. It is no new thing to allot a special number to some disease or group of diseases, but this is a new departure. There is little new, however, in the content; indeed, as one turns the pages, one is reminded of the dictum of the late Dr. Edwin E. Slossom, first director of Science Service in Washington, U.S.A.: "ninety per cent. of the manuscripts that I have handled in 20 years as an editor would have been improved by cutting off the first page or paragraph." With this reservation there is much to be said for the helpfulness of the issue. In the opening paper Dr. L. Singer traces in broad lines the seasonal behaviour of various diseases. There follow articles on food and clothing, and the special reactions of children and the tuberculous to the winter. No sovereign remedy is offered for winter colds and kindred ailments, but Dr. R. von den Velden thinks a great advance has been achieved in arresting the progress of catarrhs in their early stage by the intensive parenteral administration of quinine. Intramuscular injections seem to be more effective when the quinine is combined with an ethereal oil; but the treatment should not be ambulatory, rest in bed being essential. The same writer is in favour of small doses of quinine, given by the mouth, as a preventive against the minor winter infections, including influenza. In another paper Dr. W. Nipperdey relates how bacteriological examination of sick members of his hospital staff this autumn has almost invariably revealed hæmolytic streptococci in the upper respiratory tracts. Useful hints are given for the prevention of skin diseases peculiar to the winter.

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[1] See THE LANCET, July 8th, p. 88.

[2] Medical Officer, Oct. 7th, p. 151.

[3] Ibid., Nov. 18th, p. 213.

[4] H.M. Stationery Office. 9d.

[5] Medical Officer, Dec. 16th, p. 252.

[6] Deut. med. Woch., Dec. 8th.

PLACENTAL HORMONES

Two of the active substances obtained from human placenta are well authenticated—namely, ether-soluble trihydroxy œstrin, and an ether- and alcohol-insoluble substance akin to that found in the anterior pituitary body. As is well known, the first of these acts on the accessory organs of the ovariectomised test animal, while the second acts directly on the ovaries and thence on the accessory organs. A third substance, soluble in alcohol but not in ether, was discovered some years ago by Collip and called "emmenin." It was originally thought to have biological properties different from those of either œstrin or the anterior pituitary-like substance, and a great deal of apparently successful clinical work was carried out with this supposedly new substance. More recent work, however, has led to emmenin being bereft, one by one, of its distinctive characteristics, and it has now been definitely identified as an ether-insoluble compound of trihydroxy œstrin.[1] As such, it is unlikely to possess clinical value other than that of the parent œstrogenic substance, and the necessity for an individual name, other than one expressing its chemical constitution, is more than doubtful.

LEPROSY IN CEYLON

In May last Dr. R. G. Cochrane, medical secretary of the British Empire Leprosy Relief Association, paid a visit to Ceylon, by invitation of the State Council, to investigate the present position of leprosy there. In a report now issued in manifold, Dr. Cochrane gives reasons for his belief that unless the existing system is modified, the disease is hardly likely to be brought under control within a reasonable period. While the letter of the law enacting segregation is strict enough, too strict in fact, the control of parole and the home isolation of cases tend to be ineffective. Some of the findings leading up to this conclusion are the following. Leprosy is usually acquired in childhood or early adolescence. In a survey it is not the number of cases that is important, but rather the age and type of cases. An area in which the cutaneous type is prevalent is much more serious than one in which only nerve cases are seen. If infected cases are common and the incidence among children and young adolescents is high, it is legitimate to conclude the disease is on the increase. Since it is manifestly impossible to deal with every area selected, districts should be chosen where there is evidence of spread, for if the disease is controlled in areas where it is spreading leprosy in other areas will automatically come under control. To view prevention in this light brings the problem within manageable proportions. In practice leprosy should be considered as only one of the many endemic diseases which require special methods of control. Wherever leprosy is endemic there is a proportion, varying from place to place, of abortive cases; only those early cases that shows signs of activity need to be treated. Adults who have had mild neural signs but have shown no indication of activity for a considerable time can be safely let alone. In the case of children, unless signs of multiple infection or of definite activity are present, no suspect needs treatment, and no mention of the suspicion need be made to the parents. Provided such a child is adequately watched and put under good conditions it has something like an 80 per cent. chance of showing no further lesion, and in many instances the suspect area will return to normal in the course of a few years. To diagnose leprosy definitely in a child is to damn its future prospects, and diagnosis should never be made lightly. If the medical officer considers the case an active one, but still in the neural non-infective stage, the child should be kept in the school and treated at some suitable centre. An open case must of course, for the sake of the other children, be at once withdrawn and isolated. Suggestions are made in the report for the training of medical officers, sanitary inspectors, school-teachers, and health visitors in the diagnosis of leprosy. If measures are organised on the lines he indicates, Dr. Cochrane is satisfied that the disease can be brought under control in the island within a reasonable time.

BRANCHIAL AND SACROCOCCYGEAL FISTULÆ

Two recent papers deal with two congenital abnormalities which, different in origin and nature, require treatment along similar lines. Hamilton Bailey,[1] discussing branchial fistulæ, dismisses the theory that they are derived from thymic remnants and supports the original view that the fistula originates in the second branchial cleft. He points out that the lining usually consists of ciliated epithelium and that the wall may contain muscular fibres, neither of which should be present in a thymic bud. The fistula, moreover, when an external opening is present, usually reaches the surface at the spot where a cervical auricle or a persistent branchial cartilage (both structures undoubtedly derived from branchial remnants) is commonly situated. It may be complete, incomplete externally, or incomplete internally, the last being the commonest. The condition is usually present from birth, and apart from discharge of mucus makes its presence felt chiefly through recurring attacks of inflammation.

The sacrococcygeal fistula, on the other hand, which is the subject of a paper by R. L. Newell,[2] does not, as a rule, become apparent until about the age of 20–24 years. In Newell's opinion, it originates as a "traction dermoid," a skin-lined cyst produced by the regression of the tail-bud with consequent traction on the skin of the median raphe: the secretion from the wall of the cyst cannot escape freely through the narrow opening, which is situated in the natal cleft, in the middle line; secondary infection occurs, and the abscess tracks upwards and outwards, to open eventually some distance from the lower opening and to one or other side of the mid-line. The fistulous condition is therefore secondary, the original abnormality consisting in a cyst lined with stratified squamous epithelium and often containing hairs.

Both types of fistula must be dealt with by complete excision. Preliminary lipiodol injection and X ray examination are important, and the necessary dissection in each case is greatly facilitated by distension of the fistula with lipiodol (Bailey) or melted paraffin wax (Newell). For branchial fistulæ a step-ladder technique is advised. A transverse-oblique incision, including the orifice of the fistula, is first made and the dissection is carried up as high as possible; after this a second incision, parallel to the first, is made, the track is threaded through, and the dissection can then be more easily continued upwards. This method has the advantage of leaving very inconspicuous scars. In the sacrococcygeal region the question of a scar is of minor importance, and a single elliptical incision, including the whole fistula, suffices. The essential point in both cases is complete removal, otherwise recurrence is certain.

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[1] Collip, J. B., Selye, H., Anderson, E. M., and Thomson, D. L.: Jour. Amer. Med. Assoc., Nov. 11th, p. 1553.

[1] Brit. Jour. Surg., 1933, xxi., 173.

[2] Ibid., p. 219.

ADVANCES IN HÆMATOLOGY

A CONVENIENT summary by Dr. G. Minot and Dr. W. B. Castle of the recent work done in hæmatology provides the most attractive feature of the 1933 Year Book of General Medicine.[1] The short, one might almost say, snappy editorial criticism of papers reviewed serves to minimise the dangers of undue credulity and to encourage further reading. Many of the papers discussed have already been noticed in THE LANCET. Attention is drawn to a series of interesting observations—for example, a case of stenosis of the small intestine associated with the blood picture of pernicious anæmia but with free hydrochloric acid and Castle's intrinsic factor in the gastric juice. The presence of the latter has also been demonstrated in two patients with pellagra and achylia. A group of German papers discussing the occurrence of megalocytosis in association with diseases of the liver confirms the observations of Wintrobe and Shumacher already reviewed in our columns. Though all observers agree that definite changes occur in red cell size in certain cases of liver disease, it is not yet clear what are the factors determining these changes, or if they are present only in a particular group of liver disorders. The highest grade of megalocytosis is reported to occur in pigment cirrhosis. Studies of the bone-marrow in some instances is said to reveal a similar megalocytosis of marrow cells, a point which would appear difficult to determine.

This section of the volume, which is well indexed, should be especially useful, since hæmatology is just now one of the most rapidly growing points of medicine.

THE RELIABILITY OF THE HALOMETER

AN interesting comparative analysis of red blood-cell diameter measurements, made respectively by the Price-Jones method and by Eve's halometer, is reported by Dr. H. P. Chaudhuri.[2] The data, films made at the same time and from the same ten healthy persons, were considered as three series: (a) 500 red cells from each of ten healthy persons measured by Price-Jones method; (b) observations by halometer on the blood of the same ten persons consisting of averages of six readings on two slides from each person (ten averages in all); (c) observations by the halometer on the blood of the same ten persons, based on readings taken on two slides for five and one slide for the rest—90 observations in all. By the usual statistical methods the means and standard deviations were obtained, distribution curves were constructed, and in each case were compared with the corresponding calculated "normal" curves. In a series of 500 red cell diameter measurements from each of 100 healthy persons (50,000 in all) C. Price-Jones[3] found that individual curves were symmetrical, and when tested by Pearson's chi square method showed in general "good fits" with their corresponding Gaussian curves, contrasting with the asymmetry and "bad fits" of curves obtained from cases of anæmia. The halometer registers a modal average, and expresses the ordinate about which the greatest number of values are distributed. This, of course, is quite distinct from the arithmetic mean which is the quotient of all the values divided by their number. In true symmetrical distributions the mean, the mode, and the median are identical and coincide with the centre of symmetry. In asymmetrical curves associated with pathological states of the blood the values of the mode and mean may often be very different. From his analysis, Dr. Chaudhuri finds there is hardly any difference between the results of the two methods for measuring the average diameters of red blood corpuscles, and concludes that the halometer can therefore be safely relied on. Inasmuch as the data are few and concern only healthy persons, they do not establish the reliability of the diffraction method for clinical purposes. These methods are obviously convenient for quickly determining the size of red cell diameters in relative rather than in absolute terms. But, in common with the colour-index and volume-index, diffraction methods measure the size of the corpuscles in mass, expressing only average figures, the details of the distribution are not known and the variability of the values cannot be accurately estimated. Dr. Chaudhuri would be doing good service if he would extend his comparisons to the blood-cells of anæmic and other not healthy persons.

PHRENIC EVULSION

THE operation of section of the phrenic nerve in the neck leaves the sympathetic connexions of the nerve intact; after phrenic evulsion these are of necessity interrupted. Loss of the motor element of the phrenic stem is followed by paralysis of the corresponding half of the diaphragms and its subsequent atrophy. The effect of removal of the sympathetic component of the nerve has given rise to much ingenious speculation, but no certain evidence of the function of this portion of the nerve has been supplied. Bonafé[4] has reported a case of some interest in this connexion. His patient, who suffered from phthisis, was subjected to an operation in which a nerve, believed to be the phrenic, was evulsed from the neck. The diaphragm remained active and it was assumed that some nerve other than the phrenic had been removed. At the same time, following the operation the patient showed considerable improvement in general condition, and the amount of sputum was diminished. At a subsequent operation the phrenic stem was identified and evulsed, and paralysis of the diaphragm was obtained. Bonafé suggests that as the beneficial effect of the first operation could not be due to any mechanical effect on the diaphragm it might have been due to the incidental interruption of some of the sympathetic connexions of the phrenic nerve. It has never been possible to trace any direct connexion between the phrenic stem and the anterior pulmonary plexus, but some of the untoward effects which have followed phrenic evulsion—for example, œdema of the lung—seem to be related to a disturbance of sympathetic rather than somatic nervous control. It is possible that further research on the sympathetic component of the nerve will provide an explanation.

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[1] The 1933 Year Book of General Medicine. Chicago: The Year Book Publishers Incorporated. 1933. Pp. 831. $3.

[2] Indian Journal of Medical Research, 1933, xxi., 315.

[3] Jour. Path. and Bact., 1929, xxxii., 479.

[4] Presse Méd., 1933, xlvi., 1604.

CONGENITAL SYPHILIS FROM BLOOD TRANSFUSION

THAT the popularity of blood transfusion in the treatment of a variety of conditions carries with it the risk of transmitting syphilis must not be forgotten, and it behoves those who are concerned in the operation of transfusion to make as certain as they reasonably can of the absence of syphilis in the donor. There are occasions, no doubt, when the transfusion is a matter of urgency, but even if there is not time for a Wassermann reaction, one of the flocculation tests can be done. Unfortunately such precautions are not always effective in preventing infection; in a number of recorded cases the donor's blood gave a negative W.R. at the time of the test, but became positive shortly afterwards. In the *American Journal of Syphilis* of October, 1933, G. R. Williamson and R. A. Strong quote a number of cases of transmitted infection which they have collected from published records, and describe a curious case of congenital syphilis derived from a blood transfusion to the mother during pregnancy. The mother was a trained nurse who for financial reasons had to return to work when four months' pregnant. From a patient, a case of suppurative appendicitis, she contracted an infection of the finger which developed into a general septicæmia so severe as to call for a transfusion; two days later she was given a second transfusion, and in neither case was the donor's blood examined for syphilis. About six weeks later she developed a rash, and two months after her baby was born, a fortnight prematurely. He was healthy at birth, but at the age of 1 month developed snuffles, and the examination of his and his mother's blood showed markedly positive W.R., though when tested on previous occasions she had shown a negative reaction. The father's blood and that of an older child were negative. The authors conclude, apparently with justification, that the child's syphilis was the result of the mother's transfusion, and it is clear that this possible source of congenital infection must not be ignored.

ANÆSTHESIA IN LABOUR

ONE difficulty has now been removed which formerly opposed attempts to estimate the value of various anæsthetics and analgesias in labour. We refer to the necessity for having observations made by an anæsthetist in charge of the patients—a condition now fulfilled in more than one lying-in hospital. Its existence has been put to good use at the Royal Free Hospital by Dame Louise McIlroy,[1] who records, in conjunction with Dr. Helen Rodway, the resident anæsthetist of the obstetrical unit, some careful studies on the alleviation of pain in 560 cases of spontaneous labour. Although nothing novel was introduced into the investigation, and the results achieved will doubtless tally with the already formed opinions of those who have given much study to the subject, there are many who will be glad of definite guidance given on firm grounds, and to these we commend the paper. Its authors point out the value of potassium bromide and chloral hydrate (in half-drachm doses of each) in the first stage and the advantages of "gas-and-oxygen" in the second. On the important practical question of anæsthesia for patients delivered by midwives alone they are cautious and say that "the problem will have to be discussed more fully in the future." They hold that efforts should be made to train midwives in the administration of gas-and-oxygen, and it is interesting to note that this plan, rather than the distribution of chloroform capsules, was the line advocated by many at the recent meeting of the Association of Anæsthetists of Great Britain and Ireland. In addition to, or without, bromide and chloral, Opoidine or morphine was used in the first stage and the statement is made that "morphine, with or without other alkaloidal derivatives of opium, is probably still the most valuable sedative and analgesic drug in use during labour." It is considered far safer than many of the barbiturates which are just now so popular, and good reasons are given for disregarding the fear of its having a bad influence on the infant—provided that dosage and time of administration are properly managed.

EPSOM COLLEGE: ST. ANNE'S SCHOLARSHIPS

IN connexion with the vacancy now existing for one of these scholarships, the regulation regarding the age of the candidates has been amended to read: "That candidates be not less than nine years of age on 30th July, 1934." The maximum age limit has been abolished. The age limit was originally over 9 and under 12, but the Council found that, with the change from day scholars to boarding scholars, many good schools did not want to receive girls until they were over 12. The maximum age limit consequently restricted the field. Actually the change took place two years ago, for in January of that year the Council fixed the age limit as 12 years. While Epsom College no longer administers the funds of the St. Anne's Scholarships, the College is interested in the endowments, having under its ægis certain scholarships for girls.

The final date for receiving applications for the vacancy has therefore been extended to Jan. 7th, 1934. The necessary forms are to be obtained from the Secretary, Epsom College Office, 49, Bedford-square, London, W.C.1.

INTRACRANIAL LESIONS FOLLOWING TRAUMA

BY way of preface to an account of his systematic studies of traumatic brain lesions Dr. O. Berner[1] briefly refers to the case which first drew attention to them. A man, between 50 and 60, with a record of increasing high blood pressure, was found dead in an hotel bedroom, the door of which had to be forced. The only lesion found in the brain was a hæmorrhage into the fourth ventricle, but there was a not inconsiderable bruise on the face over the zygomatic arch. The patient's life was heavily insured with two accident insurance companies whose medical advisers were opposed to payment of the sum assured on the assumption that the hæmorrhage had been spontaneous and primary, and the injury to the face a sequel to a fall induced by loss of consciousness. This interpretation of the cause of death was endorsed by six other Scandinavian experts, all of whom dismissed as untenable the theory that the hæmorrhage was secondary to the external lesion. Berner's dissent from this interpretation was strengthened by going into the published records, in which he found that the French surgeon, Duret, noted the presence of hæmorrhages in the walls of the fourth ventricle after injuries to the head, particularly the front of the head. Theodor Kocher paid a tribute to the Frenchman's researches by calling these Duret's lesions. Duret's theory of a "choc céphalorachidien" assumed that a blow on the forehead suddenly raises the intracranial pressure and thus sends the cerebro-spinal fluid coursing through the narrow aqueduct and into the fourth ventricle whose floor gives way under the strain. In an attempt to verify this theory Berner has carefully examined the brains of the 42 persons who died of injuries to the head, and on whom post-mortem examinations were made at the Ullevaal Hospital, Oslo, between 1930 and 1932. In as many as 25 of them, he found macroscopic hæmorrhages in the floor of the fourth ventricle or in the neighbourhood of the aqueduct. As his first case shows, the medico-legal interest attaching to the problem is considerable.

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[1] Jour. Obst. and Gyn., Brit. Emp., December, 1933, p. 1175.

[1] Nordisk Med. Tidskrift, Oct. 7th, 1933.

PROSTATIC RESECTION

PERURETHRAL resection of the prostate, having passed through phases of uncritical condemnation and uncritical acclamation, is now being carefully scrutinised so that its proper place in prostatic surgery may be determined. Anyone wishing for a survey of the current opinions could not do better than read a group of papers in the *Journal of the American Medical Association* for Oct. 28th, which is followed by the report of a discussion in which many prominent urogenital surgeons took part.

N. G. Alcock contributes a comparison of the immediate results of 400 cases of prostatic obstruction treated by prostatectomy and of 400 treated by resection. Operation statistics are, as he points out, liable to be misleading because the risks of prostatectomy vary considerably in different types of patients. Not only is the mortality of the hospital class higher than the mortality of private practice, but the mortality-rate of a surgeon who operates merely because the prostate is enlarged will differ from that of the surgeon who operates only because of urgent symptoms. Bearing this in mind Alcock has made his two groups of 400 cases as similar as possible: they came from the same social strata; they were handled in the same hospital by the same medical, surgical, and nursing staff; and they were submitted to operation for similar indications. So far as there were inequalities, he thinks they were in favour of the prostatectomy rather than the resection series. Of the cases submitted to prostatectomy 90 per cent. were treated by the two-stage operation, and it was Alcock's practice to require at least ten days of in-dwelling urethral catheter drainage before cystostomy. The average pre-operative period in hospital for the prostatectomies therefore worked out as high as 43 days, and the total stay in hospital was 71. Patients were usually sent home between the two stages for a period ranging from three weeks to several months, the average interval between the two operations being 77 days. It will be clear from this that the importance of pre-operative treatment was not minimised and there was no lack of preliminary care. Yet in the 400 cases of prostatectomy there were 97 deaths. 67 of which occurred tween the first and second operation, and 30 he enucleation. (If the 67 cystostomy deaths t counted in the mortality the rate would rom 24 to 9 per cent.) In the 400 cases by perurethral resection, on the other hand, re were 26 deaths, giving a total mortality of 6·5 per cent. Of these 26, 15 were in the first 100 ases and only 11 in the last 300; indeed, among e last 275 resections there were only 2 deaths—a ı rtality-rate of less than 1 per cent. The results o the resection series were better not only as regards tl mortality but also as regards hospitalisation. The prostatectomy patient as already noted stayed on the average 71 days, whereas the period required for resection was 9 days plus 8½ days of pre-operative treatment, making a total of 17½. The immediate saving in hospital beds is in itself very striking. On the basis of these results Alcock reiterates his opinion of a year ago—namely, that prostatic resection is the method of choice in the treatment of obstruction. As his experience as an operator has increased, the troubles and tribulations have become steadily less; the time taken for resection has much diminished; the amount of tissue removed has increased; the course of the patients has become smoother; and the results have become more satisfactory.

In a second paper Leon Herman and L. B. Greene discuss prophylactic resection. By this they mean the resection for incipient obstruction in the hope of arresting the hyperplastic tendencies of the tissue left behind. C. J. Caulk long ago pointed out that after removal of a portion of a prostate the remainder of the gland tends to shrink, and many urologists think that partial resection does something to prevent future hypertrophy. How far this is true will be shown in course of time; but as Herman and Greene point out, even if the final aim of prophylactic resection is not achieved, it relieves for the time being the symptoms of early enlargement. In the last paper of the series W. J. Engel and W. E. Lower emphasise the truth that no two cases of prostatic obstruction are alike, for not only are there wide variations in the age and general condition of the patients, but there are also differences in the form which the enlargement takes. It is therefore incumbent on us to find out what type of case should be submitted to total enucleation, and what type can be successfully treated by the less drastic and less dangerous alternative. In their opinion, the depth of the prostate is a factor of great significance in deciding the method of treatment. If the prostate per rectum is felt to be markedly enlarged and if cystoscopy reveals not only a massive projection into the bladder but also a great lengthening of the prostatic urethra, prostatic resection will be difficult and its results imperfect. Nevertheless, even in these circumstances, if the patient is evidently a "bad risk" resection must not be excluded. For carcinoma, resection followed by the implantation of radon is always the method of choice. Finally, Engel and Lower speak warmly of the value of resection in those cases described as "neglected prostatics." This group includes those who have suffered from definite symptoms of obstruction for many years but have accepted them as one of the necessary evils of old age. When prostatectomy was the only method of relief, such patients and even their medical advisers postponed operation until relief became imperative. Now that we are armed with a distinctly less formidable and more conservative remedy they should not be deprived of the relief that resection may bring.

THE Chancellor of the Exchequer announced last week in reply to a question in the House of Commons (see p. 1507) that a Royal Commission would be set up to inquire into the organisation of the University of Durham and its constituent colleges.

THE sum received in response to Sir Thomas Barlow's Christmas appeal for the Royal Medical Benevolent Fund amounts to date to £640. It is probable that more may come in after Christmas and before the end of the year, and the correct total will be announced in our next issue.

THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

X.—MILK

It is now generally recognised that suitable food and its rational utilisation are of cardinal importance in maintaining the health and efficiency of the community. An adequate and suitable diet is especially important for that section of the community which has not yet reached adult life, for it is during childhood that growth and development are rapid and the constitution and physique are being built up. If during these earlier years of life the constitution and bodily development are defective, then these defects may remain throughout life and impair energy and lower stamina and resistance to disease. It is during the early years of life when growth and development are proceeding that a right diet favours the building up of a constitution which in adult life will be able to resist "the thousand natural shocks that flesh is heir to."

Milk is one of the most important and valuable foods for this purpose. It is one of the few foods especially contrived by an animal for its offspring and is an ideal food for the young. Indeed, in the early stages of life it is the only food available, and its constitution is such that even for the adult milk and milk products form some of the most valuable foods available. It is pardonable to adapt Goethe and say that milk "ist ein ganz besondrer Saft." The high biological value of milk proteins, the rich mineral content, especially calcium and phosphorus, and the easily digested fat which milk contains make it a first-class food, especially for growing children. It is the general opinion that a child should receive about one pint of milk a day in its diet.

A large number of investigations carried out upon children have demonstrated the value of milk in nutrition, notably, Dr. Corry Mann's exhaustive and well-controlled investigation recorded in the Medical Research Council's Special Report Series No. 105. It is impossible here to review all the work which has been done on the nutritive value of milk, but those who wish for further information will find an excellent summary in "Milk Production and Control," a report of the White House Conference on Child Health and Protection, published in 1932 by the Century Company, New York.

Diseases Conveyed by Milk

In this imperfect world good is seldom unmixed with evil, and it is an unfortunate fact that milk, this supremely valuable food, may be a medium through which disease is conveyed. Milk is liable to become contaminated in two main ways with pathogenic bacteria: (1) through the cow, which may be suffering from a disease communicable to man; pathogenic bacteria may be transferred from the diseased cow to its milk, and through the milk to man; (2) by contamination of the milk with pathogenic germs, either from the persons who handle and deal with the milk or from infected utensils. The chief diseases which may be conveyed to man from the cow by milk are bovine tuberculosis, undulant fever, and conditions such as septic sore-throat.

BOVINE TUBERCULOSIS

Of these diseases perhaps bovine tuberculosis may be regarded as the most important on account of its widespread occurrence in herds, its infectivity, and the serious results which characterise the disease in man.

It is estimated that at least 50 per cent. of the cows in this country are infected with bovine tuberculosis. This of course is merely a rough estimate, since the criterion of infection is the tuberculin test, and only a small proportion of the cows of this country have been subjected to the test. But where it has been applied to ordinary herds a reaction in 50 per cent. or more of the cows is quite common, so a general infection-rate as high as this may be assumed. Of course only a small percentage of these infected cows are at any given time yielding tuberculous milk, but since tuberculosis is a progressive disease all reacting cows form a reservoir of potential tuberculous milk producers. The proportion of cows throughout the country which are giving tuberculous milk may be estimated as somewhere between 1 and 2 per cent. Many of these would on clinical examination show signs of tuberculosis of the udder, but a further proportion showing no clinical signs would be found to be supplying tuberculous milk. The examination of milk from a number of cows which reacted to the tuberculin test but showed no clinical signs of tuberculosis disclosed the fact that 1·4 per cent. of them were yielding tuberculous milk.

The estimate that between 1 and 2 per cent. of the cows of the country may be yielding tuberculous milk does not mean that only 1 to 2 per cent. of the milk-supply of the country contains tubercle bacilli. The milk from the cows in any herd is mixed, and one tuberculous cow will infect a whole churn; when this churn is mixed with other milk at a collecting depôt the whole of the mixed milk will become infected. The proportion of milk which may become infected thus depends not only upon the number of cows yielding tuberculous milk, but upon the degree to which milk from various sources is mixed. The results of examination of samples taken in various towns show very different proportions of tuberculous milk, but on the average about 7 per cent. of samples so examined are found to be tuberculous. In Manchester the milk entering the city from a large number of farms is examined, and in 1930 14 per cent. of these farms supplied tuberculous milk. In London it is customary to bring in milk in large glass-lined tanks, each containing about 3000 gallons of milk, and examination of samples from these tanks shows that a large majority or even all of them may contain tuberculous milk.

It is evident that ample opportunity exists for the consumer of ordinary raw milk to become infected with bovine tuberculosis, and unfortunately such infection does occur to a considerable extent. The bovine tubercle bacillus is responsible for a considerable proportion of non-pulmonary tuberculosis in man, and recently it has been found in a number of cases of pulmonary tuberculosis. Dr. Stanley Griffith has tabulated the proportion of cases of bovine origin in different forms of the disease and according to different age-periods as follows:—

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All the data for the above table were obtained from material removed from patients during life. The figures therefore represent the *incidence* of bovine infection, and not mortality from this cause.

It has been estimated that about 2000 deaths, mostly in children, occur annually from bovine the forehead suddenly raises the intracranial pressure and thus sends the cerebro-spinal fluid coursing through the narrow aqueduct and into the fourth ventricle whose floor gives way under the strain. In an attempt to verify this theory Berner has carefully examined the brains of the 42 persons who died of injuries to the head, and on whom post-mortem examinations were made at the Ullevaal Hospital, Oslo, between 1930 and 1932. In as many as 25 of them, he found macroscopic hæmorrhages in the floor of the fourth ventricle or in the neighbourhood of the aqueduct. As his first case shows, the medico-legal interest attaching to the problem is considerable.

PROSTATIC RESECTION

PERURETHRAL resection of the prostate, having passed through phases of uncritical condemnation and uncritical acclamation, is now being carefully scrutinised so that its proper place in prostatic surgery may be determined. Anyone wishing for a survey of the current opinions could not do better than read a group of papers in the *Journal of the American Medical Association* for Oct. 28th, which is followed by the report of a discussion in which many prominent urogenital surgeons took part.

N. G. Alcock contributes a comparison of the immediate results of 400 cases of prostatic obstruction treated by prostatectomy and of 400 treated by resection. Operation statistics are, as he points out, liable to be misleading because the risks of prostatectomy vary considerably in different types of patients. Not only is the mortality of the hospital class higher than the mortality of private practice, but the mortality-rate of a surgeon who operates merely because the prostate is enlarged will differ from that of the surgeon who operates only because of urgent symptoms. Bearing this in mind Alcock has made his two groups of 400 cases as similar as possible: they came from the same social strata; they were handled in the same hospital by the same medical, surgical, and nursing staff; and they were submitted to operation for similar indications. So far as there were inequalities, he thinks they were in favour of the prostatectomy rather than the resection series. Of the cases submitted to prostatectomy 90 per cent. were treated by the two-stage operation, and it was Alcock's practice to require at least ten days of in-dwelling urethral catheter drainage before cystostomy. The average pre-operative period in hospital for the prostatectomies therefore worked out as high as 43 days, and the total stay in hospital was 71. Patients were usually sent home between the two stages for a period ranging from three weeks to several months, the average interval between the two operations being 77 days. It will be clear from this that the importance of pre-operative treatment was not minimised and there was no lack of preliminary care. Yet in the 400 cases of prostatectomy there were 97 deaths, 67 of which occurred between the first and second operation, and 30 after the enucleation. (If the 67 cystostomy deaths were not counted in the mortality the rate would drop from 24 to 9 per cent.) In the 400 cases treated by perurethral resection, on the other hand, there were 26 deaths, giving a total mortality of 6·5 per cent. Of these 26, 15 were in the first 100 cases and only 11 in the last 300; indeed, among the last 275 resections there were only 2 deaths—a mortality-rate of less than 1 per cent. The results of the resection series were better not only as regards the mortality but also as regards hospitalisation. The prostatectomy patient as already noted stayed on the average 71 days, whereas the period required for resection was 9 days plus 8½ days of pre-operative treatment, making a total of 17½. The immediate saving in hospital beds is in itself very striking. On the basis of these results Alcock reiterates his opinion of a year ago—namely, that prostatic resection is the method of choice in the treatment of obstruction. As his experience as an operator has increased, the troubles and tribulations have become steadily less; the time taken for resection has much diminished; the amount of tissue removed has increased; the course of the patients has become smoother; and the results have become more satisfactory.

In a second paper Leon Herman and L. B. Greene discuss prophylactic resection. By this they mean the resection for incipient obstruction in the hope of arresting the hyperplastic tendencies of the tissue left behind. C. J. Caulk long ago pointed out that after removal of a portion of a prostate the remainder of the gland tends to shrink, and many urologists think that partial resection does something to prevent future hypertrophy. How far this is true will be shown in course of time; but as Herman and Greene point out, even if the final aim of prophylactic resection is not achieved, it relieves for the time being the symptoms of early enlargement. In the last paper of the series W. J. Engel and W. E. Lower emphasise the truth that no two cases of prostatic obstruction are alike, for not only are there wide variations in the age and general condition of the patients, but there are also differences in the form which the enlargement takes. It is therefore incumbent on us to find out what type of case should be submitted to total enucleation, and what type can be successfully treated by the less drastic and less dangerous alternative. In their opinion, the depth of the prostate is a factor of great significance in deciding the method of treatment. If the prostate per rectum is felt to be markedly enlarged and if cystoscopy reveals not only a massive projection into the bladder but also a great lengthening of the prostatic urethra, prostatic resection will be difficult and its results imperfect. Nevertheless, even in these circumstances, if the patient is evidently a "bad risk" resection must not be excluded. For carcinoma, resection followed by the implantation of radon is always the method of choice. Finally, Engel and Lower speak warmly of the value of resection in those cases described as "neglected prostatics." This group includes those who have suffered from definite symptoms of obstruction for many years but have accepted them as one of the necessary evils of old age. When prostatectomy was the only method of relief, such patients and even their medical advisers postponed operation until relief became imperative. Now that we are armed with a distinctly less formidable and more conservative remedy they should not be deprived of the relief that resection may bring.

THE Chancellor of the Exchequer announced last week in reply to a question in the House of Commons (see p. 1507) that a Royal Commission would be set up to inquire into the organisation of the University of Durham and its constituent colleges.

THE sum received in response to Sir Thomas Barlow's Christmas appeal for the Royal Medical Benevolent Fund amounts to date to £640. It is probable that more may come in after Christmas and before the end of the year, and the correct total will be announced in our next issue.

THE PREVENTIVE ASPECTS OF MEDICINE

A Series of Lectures in progress during the Winter Session at King's College Hospital Medical School

X.—MILK

IT is now generally recognised that suitable food and its rational utilisation are of cardinal importance in maintaining the health and efficiency of the community. An adequate and suitable diet is especially important for that section of the community which has not yet reached adult life, for it is during childhood that growth and development are rapid and the constitution and physique are being built up. If during these earlier years of life the constitution and bodily development are defective, then these defects may remain throughout life and impair energy and lower stamina and resistance to disease. It is during the early years of life when growth and development are proceeding that a right diet favours the building up of a constitution which in adult life will be able to resist "the thousand natural shocks that flesh is heir to."

Milk is one of the most important and valuable foods for this purpose. It is one of the few foods especially contrived by an animal for its offspring and is an ideal food for the young. Indeed, in the early stages of life it is the only food available, and its constitution is such that even for the adult milk and milk products form some of the most valuable foods available. It is pardonable to adapt Goethe and say that milk "ist ein ganz besondrer Saft." The high biological value of milk proteins, the rich mineral content, especially calcium and phosphorus, and the easily digested fat which milk contains make it a first-class food, especially for growing children. It is the general opinion that a child should receive about one pint of milk a day in its diet.

A large number of investigations carried out upon children have demonstrated the value of milk in nutrition, notably, Dr. Corry Mann's exhaustive and well-controlled investigation recorded in the Medical Research Council's Special Report Series No. 105. It is impossible here to review all the work which has been done on the nutritive value of milk, but those who wish for further information will find an excellent summary in "Milk Production and Control," a report of the White House Conference on Child Health and Protection, published in 1932 by the Century Company, New York.

Diseases Conveyed by Milk

In this imperfect world good is seldom unmixed with evil, and it is an unfortunate fact that milk, this supremely valuable food, may be a medium through which disease is conveyed. Milk is liable to become contaminated in two main ways with pathogenic bacteria: (1) through the cow, which may be suffering from a disease communicable to man; pathogenic bacteria may be transferred from the diseased cow to its milk, and through the milk to man; (2) by contamination of the milk with pathogenic germs, either from the persons who handle and deal with the milk or from infected utensils. The chief diseases which may be conveyed to man from the cow by milk are bovine tuberculosis, undulant fever, and conditions such as septic sore-throat.

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All the data for the above table were obtained from material removed from patients during life. The figures therefore represent the *incidence* of bovine infection, and not mortality from this cause.

It has been estimated that about 2000 deaths, mostly in children, occur annually from t tuberculosis. A considerable proportion of the cases of non-pulmonary bovine tuberculosis do not die from this disease; it is responsible for a large and indeterminate amount of invalidity and deformity which may persist indefinitely and impair the health and usefulness of the sufferer throughout the rest of life.

It is sometimes argued that the drinking of tuberculous milk is desirable because infection with the bovine tubercle bacillus may produce immunity against infection with human tuberculosis. This proposition is based on the misconception that the bovine tubercle bacillus is less virulent for man than the human bacillus, and produces generally a mild non-progressive disease. This is not true. The bovine bacillus is able to produce every variety of tuberculous lesion and is a frequent cause of death. The bovine tubercle bacillus which is capable of producing the most severe and fatal forms of tuberculosis, such as meningitis, general tuberculosis, and ulcerative pulmonary tuberculosis in both children and adults, cannot be regarded as a suitable immunising agent for human beings.

HOW TO COMBAT BOVINE TUBERCULOSIS

There are two possible ways of combating the evil of bovine tuberculosis: (1) the eradication of tuberculosis from the herds of the country, and (2) pasteurisation of the milk-supply.

The eradication of tuberculosis from all herds is a formidable problem. The drastic remedy of slaughtering all reacting cattle has been suggested; but as such cattle form about half the cow population of the country the milk-supply would at one stroke be reduced to about half. Furthermore, the remedy would be merely a temporary one. Infection would soon find its way into the remaining cows, and the position would in a short time be as bad as ever.

There is, however, a good deal of legislation which has as its object the discovery and elimination of cows which are yielding tuberculous milk, or are suffering from tuberculosis of the udder or other forms of advanced tuberculosis. This legislation is mainly incorporated in the Milk and Dairies (Consolidation) Act, 1915, the Milk and Dairies Order, 1926, and the Tuberculosis Order, 1925. Considerable administrative machinery is required for the sampling and examination of milk for the presence of tubercle bacilli and for tracing the sample to the diseased cow. It is obvious that when the milk sample is obtained from bulked milk, possibly derived from several hundred farms, this method of tracing the diseased cow becomes so difficult as to be hardly practicable. More can be hoped from a systematic clinical examination of herds with a view to removing cows suffering from tuberculosis of the udder, cows yielding tuberculous milk, and those suffering from other forms of advanced tuberculosis. Systematic examination is carried out in certain parts of the country, but although the practice is extending it is by no means universal as yet. A complete scheme of routine clinical examination at frequent intervals would be costly, and though it would undoubtedly reduce the incidence of cows yielding tuberculous milk, it would not eliminate them entirely. There would remain the large reservoir of reactors showing no clinical signs, which as the disease progresses would provide cows with clinically recognisable tuberculosis which would in their turn have to be eliminated.

Amongst this reservoir also would be some cows yielding tuberculous milk whose lesions could not be detected by mere clinical examination. This could, of course, be supplemented by bacteriological tests of the milk of each herd, but I have said enough to show the difficulties of inspectorial systems of control. A reduction of the incidence of cows yielding tuberculous milk could be expected from such a system, but in practice complete elimination could hardly be attained.

With present methods of transporting milk in large bulk a mere reduction in the number of cows yielding tuberculous milk would not be enough. A large tank of milk might easily contain the produce of 1000 or more cows, and if only one of these happened to be yielding tuberculous milk the whole tank would still be infected. The concentration of bacilli might not be great, but we do not know what concentration of bacilli is necessary to infect any particular consumer, and we cannot regard milk which contains any tubercle bacilli as free from danger.

Another method of obtaining a herd free from tuberculosis is to make it up of cows which do not react to the tuberculin test, to guard these carefully from infection, and to test the herd at frequent intervals with the tuberculin test, and immediately remove any which may have become reactors. This is the principle upon which herds producing Certified and Grade A (tuberculin tested) milk are constituted. It is, however, by no means easy to keep a herd of this kind free from tuberculosis; it is usual for some reactors to be found each time a herd is tested, and occasionally herds may even yield tuberculous milk. The number of these specially constituted herds is small and they account for less than 1 per cent. of the whole milk-supply.

There is little likelihood of ensuring a raw milk-supply for the whole country free from the tubercle bacillus, although of course all possible steps should be taken to reduce the incidence of disease amongst cattle to as low a level as possible. The difficulty of doing this is considerable, and at the present time a committee of the Economic Advisory Council is considering how the problem of disease in cattle can best be dealt with.

Pasteurisation of the milk-supply seems thus to be the only means available of ensuring a general milk-supply free from tubercle bacilli, since the occurrence of these bacilli in the ordinary milk-supply appears at present to be almost inevitable. Pasteurisation has the further advantage of eliminating danger of infection by other organisms, as will be seen below.

UNDULANT FEVER

Contagious abortion in cattle is due to infection with *Brucella abortus* and is widespread amongst the herds of the country. The cow's milk is liable to become infected with the bacillus, and in this way the disease can be conveyed to man, in whom it is called undulant fever. Not much is yet known as to the proportion of the milk-supply which is infected, but certain investigations indicate that the proportion of infected milk may be considerable. *Br. abortus* has been found in 28 per cent. of samples of raw milk in Aberdeen and in 19 per cent. of samples of raw milk in Edinburgh. Even the highest grades of milk from tuberculin-tested herds, Certified milk and Grade A (T.T.) milk, may be infected, since there is no adequate provision for dealing with infected cows in such herds.

Until recently but few cases of undulant fever in man have been recognised or diagnosed in this country, but the attention which is now being devoted to it is resulting in the detection of an increasing number of cases.

The difficulty of eradicating contagious abortion from herds is as great or greater than in the case of tuberculosis, so that the only practical way of safeguarding the consumer of milk against undulant fever is pasteurisation of the milk-supply.

SEPTIC SORE-THROAT—INTESTINAL INFECTIONS

From time to time outbreaks of infectious disease such as scarlet fever, septic sore-throat, diphtheria, typhoid and paratyphoid fever, and dysentery have occurred, the cause of which has been traced to the consumption of infected milk. Since 1912 in this country more than 80 such outbreaks, involving many thousands of sufferers, have been recorded, and it is probable that many other cases have escaped record. Septic sore-throat may be caused by the infection of the milk from cows suffering from a form of mammitis due to a hæmolytic streptococcus harmful to man. Milk may also be infected directly by milkers or others who are suffering from a sore-throat or harbouring in their throats pathogenic streptococcal organisms.

Typhoid fever, paratyphoid fever, and dysentery outbreaks conveyed by milk result from its contamination by those engaged in handling it before consumption or by infected utensils. Again, the only means of guarding effectively against outbreaks of this kind is by pasteurisation of the milk-supply. In this connexion it should be noted that milk may become infected after pasteurisation. Cases of this sort have occurred and are a cogent argument for the automatic bottling of milk immediately after it has been pasteurised.

The Need for Pasteurisation

It is clear that the only way of ensuring a safe general milk-supply is pasteurisation. But it must be effective and therefore properly controlled. In this country control is provided only where milk actually is sold as pasteurised milk, when the conditions prescribed in the Milk (Special Designations) Order must be complied with. These conditions include the holding of all the milk at a temperature of 145° F. to 150° F. for half an hour. Pasteurisation under these conditions ensures destruction of pathogenic organisms and at the same time affects to the least extent the characters of the milk which are important nutritionally and commercially.

Pasteurisation produces only very slight changes in the chemical and physical characters of milk. The chief alterations which have been observed are as follows:

A small fraction not exceeding 5 per cent. of the milk albumin is coagulated; the action of rennet on milk in the making of cheese is somewhat delayed; about 2 per cent. of the total calcium of the milk is rendered insoluble; and the vitamin C which milk contains is to some extent destroyed. Under average conditions about half of the vitamin C may undergo destruction.

The changes to which most importance is usually attached are the diminution of vitamin C and the alteration in the calcium of the milk. The amount of vitamin C in raw milk is in any case very small, and even in raw milk some loss occurs owing to oxidation following unavoidable agitation in the ordinary course of delivery; so that the absolute loss on pasteurisation is not great. As regards calcium, cow's milk is very rich in this mineral; it contains about four times as much as human milk and the small proportion (2 per cent.) rendered insoluble is insignificant. Furthermore, a portion of this 2 per cent. remains in suspension in the milk and is available for nutrition if required.

Pasteurisation may also slightly affect what is known in the trade as the "cream line"; that is to say, the layer of cream which rises to the surface of the milk after it has been heated to 145° F. may be slightly less deep than if the milk had not been heated. Traders generally attach commercial value to a good cream line and consequently pasteurise as near to 145° F. as possible; and some would like the pasteurising temperature to be fixed as low as 142° F. at which temperature the cream line is not affected. But at temperatures below 145° F. all the tubercle bacilli are not infallibly destroyed. Therefore any reduction in the lowest temperature at present prescribed—namely, 145° F.—could not be permitted.

The possible influence of pasteurisation upon the nutritive value of milk, and the slight changes in the milk produced thereby, have been the subject of considerable investigation.

The results obtained have been conflicting, but broadly speaking no convincing evidence has been supplied that pasteurisation impairs the nutritive value of milk to any appreciable extent. In any case the immense advantage of safety conferred by pasteurisation greatly outweighs any alterations in nutritive value which if they occur at all must be very slight. It should be noted that the differences between human milk and cow's milk are very much greater than any which may exist between raw and pasteurised milk. A full discussion of the nutritive values of raw and pasteurised milk is given in Bulletin No. 3 of the Hannah Dairy Research Institute, Kirkhill, Ayr, 1933.

"POSITIVE HOLDER" METHOD

The pasteurisation of milk on a commercial scale in this country is carried out by what is known as the "positive holder" method of pasteurisation.

This consists esentially in allowing the milk to flow through a heating apparatus in which the heating medium is usually water raised to a temperature a few degrees above the pasteurising temperature so that the milk issues from it at a temperature between 145° and 150° F. Automatic thermal controls should be provided so that the temperature of the issuing milk may be kept constant. The heated milk is allowed to flow into a large heat-insulated tank or holder, where it is held for half an hour. During this period the temperature of the milk should not fall more than a degree or two. The milk is then allowed to flow out of the holder through a pipe into which an automatic temperature recorder is inserted by means of which it is possible to check the temperature of the issuing milk and therefore whether it has been held at the required pasteurising temperature of at least 145° F. It is essential that the pasteurising apparatus should be carefully designed so as to ensure that the whole of the milk has been held at the required temperature for the required time and that there is no possibility of its becoming mixed with any unpasteurised milk.

Full details as to the precautions which should be observed in securing efficient pasteurisation are set forth in the Ministry of Health's publication, "Notes on the Pasteurisation of Milk," and in papers by Sir Weldon Dalrymple-Champneys and R. Seligman, Ph.D., in the *Journal of the Royal Sanitary Institute*, July, 1932, pp. 14–30.

"FLASH" AND "CONTINUOUS FLOW" METHODS

There are other methods of treating milk by heat, including the so-called "flash" and "continuous flow."

Flash pasteurisation consists in rotating the milk for a few seconds in a thin film around the wall of a cylinder which is kept hot by steam on the other side of the wall. The temperature which the milk attains is very variable and the exposure is very brief. Accurate control is impossible, and the results as regards the destruction of pathogenic organisms cannot be relied upon. Flash pasteurisation does not comply with the legal requirements for the production of pasteurised milk, and consequently, milk treated by a flash pasteuriser cannot be sold as pasteurised milk.

In *continuous flow* pasteurisers the milk is allowed to flow slowly through a series of heated tubes so that its passage through the tubes occupies half an hour. But the behaviour of heated liquids flowing through tubes is such that it is impossible to be certain that the flow has been uniform and that all the milk has been exposed to heat for half an hour—some of it may issue in a very much shorter time. Continuous flow pasteurisers are, therefore, not allowed to be used for milk sold as pasteurised milk.

These pasteurisers may be satisfactory from a commercial point of view where the reduction of bacteria and a consequent improvement in the keeping qualities of the milk are the main considerations

But as regards pathogenic bacteria mere reduction n number is not enough—their destruction must be absolute, and this can only be guaranteed with certainty by positive holder pasteurisation.

PASTEURISATION IN BOTTLE

So far, I have spoken of the pasteurisation of milk in bulk, but it is also possible to pasteurise it in bottle. There are technical difficulties in carrying out satisfactorily this method of pasteurisation on a large scale, and it has not yet been adopted commercially to any great extent. If it can be properly carried out, it presents the obvious advantage of preventing the possibility of recontamination of the milk after pasteurisation.

One method of "in-bottle" pasteurisation consists in filling milk heated slightly above 145° F. into previously heated bottles and then allowing them to travel slowly on a conveyer through a chamber kept at the pasteurising temperature, the bottles taking half an hour on their journey through the chamber. This method is really a positive holder method, the holder in this case being the bottle itself.

Clean Milk and Safe Milk

There is a further point on which confusion sometimes exists—namely, the distinction between clean milk and safe milk.

Clean milk is milk which has been produced and distributed with the minimum amount of extraneous contamination such as manure from the cow's udder and flanks, dust from the cowshed and dairy, and dirt from the milker's hands, utensils, and milk containers. When care is not exercised, such contamination readily occurs and dirty milk results. Dirty milk is not only æsthetically objectionable but it also has poor keeping qualities, and for this reason alone reputable firms are anxious to obtain their supplies as clean as possible. Even if the dirt in milk contains no pathogenic organisms, the conditions which lead to dirty milk also favour contamination with any pathogenic organisms which may be in a position to gain access to the milk.

It must be noted, however, that a clean milk is not by any means necessarily a safe milk. Milk obtained from a herd infected with tuberculosis or contagious abortion is never safe, no matter how cleanly it may be produced. Cleanliness of the general milk-supply is desirable but cleanliness is not enough. To ensure its safety, that is to say, its freedom from pathogenic organisms, pasteurisation is essential.

It is a common objection to pasteurisation that it favours unclean methods of production by concealing the faults of dirty milk and so enabling dirty milk to be placed on the same footing as clean milk. This is very far from being the truth. Although pasteurisation ensures the safety of all milk, clean or dirty, the keeping qualities of a pasteurised dirty milk are much inferior to those of a pasteurised clean milk and milk dealers who conduct their business properly realise the advantages of obtaining milk as clean as possible before they pasteurise it.

In conclusion it may be emphasised that while milk is one of the most valuable foods which we possess, unfortunately its consumption may be attended with danger to health, and we cannot recommend it unreservedly unless it has been made safe by efficient pasteurisation.

J. M. Hamill, O.B.E., M.D., D.Sc.
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Ministry of Health.

SPECIAL ARTICLES

KING EDWARD'S HOSPITAL FUND FOR LONDON

THE ANNUAL RECEIPTS

A brief account of the meeting of the General Council of this Fund held on Dec. 12th at St. James's Palace reached us on the eve of going to press. H.R.H. the Prince of Wales presided, and said that the Fund again proposed to distribute £300,000 among the hospitals. In maintaining the distribution at the high figure of £300,000, they had been greatly helped, said His Royal Highness, by the annual contribution of the League of Mercy, which was likely again to reach a total of £20,000. They had also to thank the British Charities Association for another donation of £10,000, the amount allocated for London hospitals out of the proceeds of the recent activities of that Association. One of the things that encouraged the Fund to keep the distribution up to £300,000 was that the capital had been increased by two substantial gifts. One consisted of freehold property valued at £18,000, to be known as "The William and Francis Radford Endowment, from a member of the family." The other was a reversion of £136,000 which came to the Fund on the lamented death of the Fund's great supporter and friend, Lady Mount Stephen. This raised the total benefactions received from the late Lord Mount Stephen to £1,308,000, of which £503,000 had been given during his lifetime. Lady Mount Stephen herself most generously left her tiara to be sold on behalf of the Fund.

HOSPITALS AND MOTOR ACCIDENT CASES

As an example of the way in which the Fund assisted hospitals in addition to the annual distribution, the Prince instanced the Parliamentary Committee which did the most useful work and, in coöperation with the British Hospitals Association, watched the interests of the Voluntary Hospitals in connexion with any Bills which might affect them, and was ready to take prompt action when occasion arose. Success had attended the promotion of the much-needed legislation to give hospitals more adequate payment towards the cost of treating motor accident cases. It was on the initiative of the Committee that the hospital clause had been introduced into the original Road Traffic Act in 1930; and they have now secured the adoption of an amendment to the new Road and Rail Traffic Act, designed to remove unforeseen difficulties and give the hospitals rather more than they were getting, though not, indeed, anything like full recoupment for their present burden. The amendments were really essential, and the King's Fund had done great service to the hospitals by the part it had played in securing their acceptance by the Government. In this connexion he expressed the indebtedness of the Fund to Mr. Whitley, to Lord Macmillan, Chairman and Vice-Chairman of the Parliamentary Committee; and to the three members of the Management Committee who also took so active a part, Lord Donoughmore, Lord Somerleyton, and especially Lord Luke. Gratitude was also due to all those who supported the amendment in Parliament, which included various Members of the House of Commons whose names did not appear, but who were prepared to speak, and whose influence doubtless had great effect. As in 1930, the coöperation of the King's Fund and the British Hospitals Association proved very effective, but what really won the day was the general recognition of the justice of the hospital claim to fair reimbursement for the services they rendered to persons injured on the road.

His Royal Highness also referred to the Miniature Hospital which had been exhibited all over England. It had just been in the North of England and would soon go to Scotland, as a means of helping the Fund.

In conclusion the Prince mentioned the efforts of the Fund to reduce the time of waiting in the out-patient departments of hospitals. He also referred to the loss which the Fund had suffered by the deaths of Lord Burnham, Mr. Samuel, Sir George Makins, Mr. Robert Fleming, Mr. C. R. Hoare, and Mrs. H. B. Irving. Mr. D. A. Thomson, he said, and Mr. Walter Bell had been added to the Propaganda Committee.

THE TREASURER'S STATEMENT

Mr. E. R. Peacock (the hon. treasurer) in presenting his statement said if the expectations of the Fund were fully realised legacies would bring in considerably more than the five-year average from that source, which was itself well over £60,000. In that event they would have enough to cover the distribution of £300,000, to which had to be added £20,000 for pension grants, part of which they could draw from a special reserve created for the purpose in earlier years. Annual subscriptions and donations showed a slight decrease, and while they had had some very welcome gifts from new donors they had not had any of those large unexpected donations which had so often been of invaluable service in the distribution. The increase of £154,000 in their capital would materially strengthen the position of the Fund for the future.

Lord Marshall, the hon. treasurer of the League of Mercy, said that thanks to the interest taken in the League by the Prince of Wales, its Grand President, they had been able to allot, for the second consecutive year, the sum of £20,000 to the King's Fund. The sums distributed by the League of Mercy were now: through King Edward's Hospital Fund for London, £524,034; to Extra-Metropolitan Hospitals, £161,726; making a grand total of £685,760.

GRANTS TO HOSPITALS AND CONVALESCENT HOMES

Sir William Cooper Perry, chairman of the Distribution Committee, presented the report, which stated that the number of hospitals applying for grants was again 147. The accounts of the hospitals for 1932 showed that, although some were in serious difficulties owing to the financial crisis, the hospitals with surpluses for the year still outnumbered those with deficits, the figures being 85 and 60 respectively, as against 87 and 58 in 1931; while the net aggregate surplus for the year was £101,000 as against £76,000 for 1931. (The results for 1933 will not be known for some time.) The number of hospitals with branches had been increased this year to 25 by the opening of the "Dame Gertrude Young Convalescent Home." This was bequeathed to the King's Fund by the late Sir John Young and was now used, in accordance with his wishes, by the Central London Throat, Nose, and Ear Hospital as a Recovery Home.

The adoption of this report was seconded by Sir William Collins and carried unanimously.

Sir Cooper Perry then presented the report of the Committee on the Distribution to Convalescent Homes which fixed the amount available for distribution amongst convalescent homes not attached to any particular hospital in London at £3000, being the same as last year. The number of applications eligible for consideration—namely, 56—was also the same as last year.

The recommendations were seconded by Mr. F. W. J. Jackson and carried; and on the motion of the Very Rev. J. H. Hertz, D.D. (the Chief Rabbi), seconded by Lady Ampthill, it was resolved that the cheques for the grants should be posted immediately.

ARRANGEMENTS FOR 1934

His Royal Highness said he was sorry to learn that owing to ill-health Sir James Kingston Fowler would be unable to continue on the Council. He proposed to reappoint the other members of the Council and committees with Lord Wakefield as an additional member of the Revenue Committee. He also proposed to enlarge the Voluntary Hospitals (Parliamentary) Committee, which would now consist of the following: Mr. J. H. Whitley, chairman; Lord Macmillan, vice-chairman; Lord Dawson, Lord Moynihan, Sir Arthur Stanley, Sir Herbert Cohen, Sir John Rose Bradford, Sir Edward Penton, Sir Cooper Perry, Mr. Warren Low, and others, with the honorary secretaries.

On the motion of the chairman of the Management Committee (the Earl of Donoughmore), seconded by Sir Ernest Pooley, resolutions were approved delegating powers to the various committees for 1934. The meeting terminated with a vote of thanks to His Royal Highness, proposed by the Bishop of Southwark and seconded by Sir Edward Penton. The Prince briefly replied.

MEDICINE AND THE LAW

Medical Act Offence (American Diploma)

At the West London police-court recently John Richard Taylor, of Cromwell-road, London, aged 72, was fined £20 (with 10 guineas costs) for infringing Section 40 of the Medical Act by wilfully and falsely using the title of a doctor of medicine. To the name on his brass plate he had added the description "M.D.U.I.," the last two letters being understood to mean University of Illinois. It was stated on his behalf that he was an Englishman, who had graduated at Illinois in 1899 after four years' study, that during the war he gave up his practice in America to volunteer for war work in England, that he served with the Royal Army Medical Corps, and that after the war he was appointed ophthalmic surgeon to the Recruiting Medical Board and was employed at Tidworth as specialist in ear diseases in the southern area. Mr. Marshall, the magistrate, said he must disregard the statements about military service in view of a previous fine for the same offence at Nuneaton in 1923. He had no doubt that Taylor had deliberately held himself out as being a surgeon and doctor of medicine in England, knowing that he had no right to the title. "I consider this a serious matter; whatever his skill may be, he has no business to represent that he is registered by the General Medical Council." The amount of £20 is the maximum fine permitted by Section 40.

The law about the use or abuse of foreign diplomas has produced some interesting cases. In 1860 a defendant who had a genuine German medical diploma was held not to have "wilfully and falsely" assumed the title (Ellis *v.* Kelly). But in 1872 an unregistered person who called himself M.D. on the strength of having bought a diploma from an American university was held liable to fine under Section 40; he knew his title was worthless, and he acted (as Baron Martin observed) "wilfully" because he did it on purpose, and "falsely" because he thereby pretended to be on an equal footing with a registered practitioner holding an English doctor's degree (Andrews *v.* Styrap). On the other hand, in 1877 a magistrate refused to fine a man who exhibited the diploma of doctor of medicine of the Metropolitan Medical College of New York; it was held that he had made no wilful and false pretence (Carpenter *v.* Hamilton). How is it possible, asked Baron Cleasby, to make out a man to be falsely pretending when the only evidence is that he is pretending to be what he really is? Later, in 1896, one Bridgwater described himself as "M.D. U.S.A.," and displayed an American diploma; the magistrate said there was no proof of wilful and false pretence, and the High Court refused to interfere with his decision. In the same year a woman doctor whose name had been removed from the roll of the Royal College of Physicians in Ireland continued to use the title of M.D. by virtue of her possession of that degree conferred by the university of Zurich (R. *v.* Frickhart). Again the magistrate declined to impose a fine under Section 40, and again the High Court confirmed his action. If the words "wilfully and falsely" have the meaning which Baron Martin ascribed to them in Andrews *v.* Styrap, one can understand how significant the magistrate found the previous offence in 1923 in the recent case at the West London court, in spite of the fact that the Illinois diploma was perfectly genuine.

Lord Buckmaster on Coroners' Courts

In moving a motion on the dangers of motor traffic Lord Buckmaster complained in the House of Lords on Dec. 5th that coroners' courts were not equipped to deal with traffic casualties. There is no reason, he said, why such a court should sit. "The reason originally for a coroner's inquiry was to determine whether a person should be buried in consecrated or unconsecrated ground; all that can be found of the wretched victim of a motor-car can be buried without question; I see no reason why the court should be permitted to continue its function." Earlier in his speech he advocated the abolition of all coroners' courts—"they are nothing but an impediment to justice." It is probably unnecessary to explain that when an ex-Lord Chancellor makes statements in the course of a Parliamentary debate, they are not to be regarded as of supreme judicial consequence. Lord Buckmaster, himself the victim unfortunately of a traffic accident, is one of our few orators, and we can pay tribute to the passionate sincerity of his rhetoric without expecting that inquests will be forthwith abolished. His grievance against coroners' courts was that on certain occasions to which he referred the jury had refused to commit a motorist for trial. He spoke as if a jury at assizes was the only tribunal to be trusted; yet it is common knowledge that even the jurors at assizes frequently acquit motorists on charges of manslaughter.

On Dec. 18th the City coroner took up Lord Buckmaster's challenge. Addressing an inquest jury, Mr. Danford Thomas replied with spirit that, if coroners were incompetent to direct a jury, the law provided machinery for their removal. He went on to explain that in traffic cases there are only two possible verdicts—manslaughter or misadventure. After verdicts of misadventure coroners' juries were often pressed by counsel to add that they exonerated the driver from all blame; if they regarded the casualty as a pure accident, they were entitled to say so; sometimes juries went further and said that the driver was free from blame, but that blame attached to other parties. Mr. Danford Thomas suggested that there was room for some alteration in the law whereby coroners' juries, if they flinch from the word manslaughter, might return an intermediate verdict of "death by negligent driving." This, he said, might lead to more committals and thus possibly to more convictions and punishments. He emphasised the importance of coroners' juries realising the significance of their verdicts. It was not so much that the coroner's court was an impediment to justice as that coroners' juries under the present law were unable to return verdicts which the facts of the case would often entitle them to return.

NEW MEDICAL SCHOOL AT SYDNEY

(FROM OUR CORRESPONDENT IN NEW SOUTH WALES)

This autumn has seen the opening of a new medical building—the gift of the Rockefeller Institute to the University of Sydney. It is realised in Australia as elsewhere that if medicine and surgery are to progress they must become scientific departments, equipped with adequate laboratories and with staffs entirely devoted to their work; the faculty of medicine must combine its educational functions with those of systematic investigation. In Sydney this ideal would probably have remained an ideal but for the generosity of George Henry Bosch, a business man of the city. Having made in 1924 a gift to the University to further a special study, he three years later endowed, with £25,000, the chair of embryology and histology. Finally, after thorough examination of the ways in which other countries had met the needs of modern medicine, he gave the University a further sum of £225,000 to found full-time chairs of medicine, surgery, and bacteriology, and the scheme has been completed by a grant of £100,000 from the Rockefeller Foundation for a building.

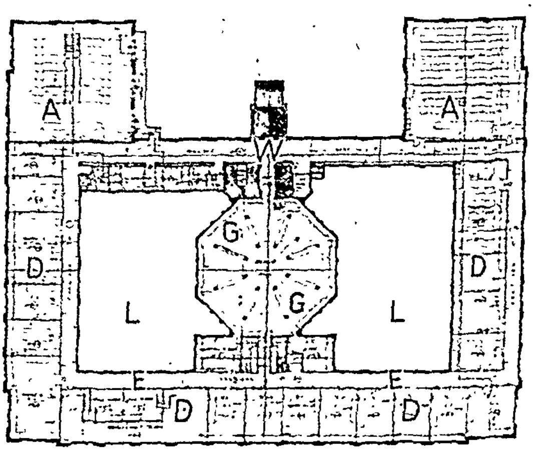

FIG. 2.—Plan of the building.

The building, which Fig. 1 shows nearing comple-

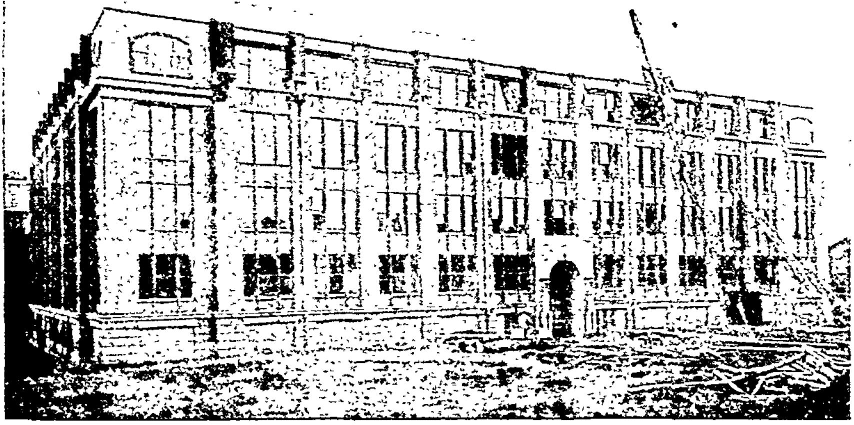

FIG. 1.—The Rockefeller Foundation building which is to house the medical school of the University of Sydney. Approaching completion.

[Photograph by Sydney Morning Herald

tion, is to accommodate the departments of medicine, surgery, obstetrics, pathology, and bacteriology, and to provide facilities for research and teaching. It is close to the Royal Prince Alfred Hospital, and is connected with it through a covered way on the second floor. The over-all dimensions of the new school are about 200 by 160 feet. Two blocks of teaching laboratories and theatres are provided on the western front (Fig. 2, A), towards Prince Alfred Hospital, with access from a corridor (W). This corridor gives access also to a central octagonal block (G) which can also be approached from the eastern corridor (E), and is flanked on either side by light courts (L). The main bulk of the building (D) is composed of research laboratories. There are five floors, of which the basement, except a portion in the octagon which houses the various services, has not been completed, and is available for future extensions. The first and second floors will be occupied jointly by the departments of medicine and surgery, which share a large demonstration hall on the first floor and a lecture theatre on the second. On the third floor will be the department of pathology with a practical classroom in the wing; on the fourth, the departments of obstetrics and bacteriology. In one wing on this floor is the theatre shared by these three departments, and in the other the classroom for students in bacteriology. In the central octagon are the library, the pathology museum, and the animal house.

Theatres and classrooms.—There are two theatres, two large laboratory classrooms, and one demonstration room, all approximately 45 ft. square. Seating accommodation in the theatres consists of upholstered unit seats of 2 ft. centres, each fitted with a writing table, for 170 students. Each classroom will accommodate 100 students. Two smaller ones are provided for advanced group laboratory exercises.

Services.—The northern light court is provided with an archway, giving entrance to vehicles. All services associated with stores, fuel, animal food, cadavers, &c., are in this court. In addition, it houses the boiler and the incinerator, which serves each floor, at the western corridor, by means of hoppers. In the centre pile the basement contains an operative surgery classroom, cadaver room, store, and switch room.

Above this is the *library*, octagonal in plan, 52 ft. wide and 20 ft. high. Radially arranged structural columns reduce the span of the floor above and permit the division of the room into a series of semi-enclosed reading bays, flanked with book stacks. Groups of windows on six sides give natural lighting. Book-stacks and periodical shelves are steel, specially designed to serve an open library system. Two subsidiary rooms and a store are at the disposal of a librarian.

The *pathological museum* is on the third floor, above the library, and has the same dimensions and plan. An added feature is a circumferential gallery, 6 ft. wide and lit by top pavement lights. On the main floor show-cases are arranged radially, and round the room, under the large window units, are set benches for the examination of museum specimens, macroscopic and microscopic. The gallery greatly increases accommodation for show-cases. A curator's room, preparation room, and a store room are subsidiary to the museum.

The main *animal house* is erected above the museum. In three rooms outside runs are provided for stock. Animals under experiment will be stored in cages, fitted in trays, on angle iron stacks. A second animal house, built above the lavatory block, provides for epidemiological work.

The *research laboratories* are grouped on the eastern front, and southern and northern wings. The corridors are placed in the north and west sides; hence all lighting of laboratories is east and south, cutting out direct sunlight for the greater part of the day. Wide windows give the greatest possible natural light. Fly-proofing of the windows is restricted to the second and third floors, which house pathology and bacteriology respectively. Cross-ventilation is established in each room. The single laboratory unit is approximately 15 by 20 ft., fitted with window and side wall benches, a cabinet, a table, power and light plugs, gas, hot and cold water. The larger laboratories are in multiples of the single unit.

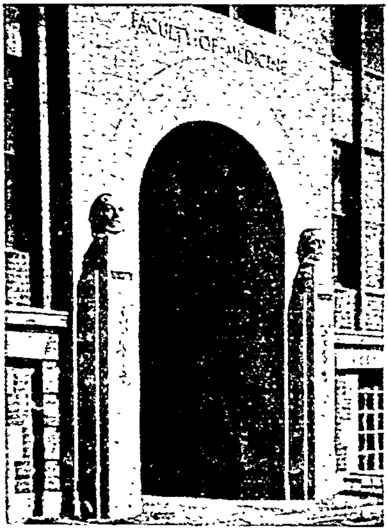

FIG. 3.—The doorway of the new school, flanked by the carved heads of Harvey and Pasteur. (From the *Sydney University Medical Journal.*)

The partitioning of the laboratory sections is not integral with the structure of the building; at any time part or the whole of the laboratory lay-out can be reorganised at relatively small cost. Every fitting is standardised as far as possible; for example, the bench drawers and cupboards are interchangeable throughout the building.

[illegible] Library
C. M. & Medical College

BUCHAREST

(FROM OUR OWN CORRESPONDENT)

A SYNDICATE OFFICE OF PHYSICIANS

THE National Medical Association have resolved to establish a "syndicate office," which will deal with all controversial matters affecting the medical profession and will be at the disposal of medical men for consultation in questions of law. The office will form an integral part of the Association. The main reason which led to the innovation was the economic crisis which affected the medical profession more than any other. The Association became convinced that the economic situation is falsely exploited by many private patients who wished to evade the obligation to pay their doctor's fees. It will be the task of the syndicate office to arbitrate unsettled questions between physicians and the families of patients; it will also provide legal help for doctors against whom legal proceedings are being taken for professional offences, or who are summoned to the courts as a consequence of their professional activities. It will be the duty of the syndicate office to study the drafts of all new Bills concerning the medical profession, and to prepare comments on them for the guidance of the National Medical Association.

THE ACCUMULATION OF MEDICAL APPOINTMENTS

A new law to prevent the accumulation by one person of many appointments has recently been passed. It provides that no one shall hold more than one post which is paid by salary or allowance, by the State, county, or parish, or by a sick club, the budget of which is subject to official approval. This does not apply to the scientific staff or junior assistants at laboratories or hospitals; if they devote their whole time to scientific work, without engaging in private practice, they may take on more than one appointment. Nor is a public health officer debarred from taking over various paid positions if the total of payment received does not exceed a certain monthly sum. The penalty for attempting to evade this law is the loss of any public appointment and a heavy fine.

By exercising a strict supervision over the distribution of medical posts the Medical Chamber, which to some extent corresponds to your General Medical Council, has helped more than two hundred physicians to gain employment.

MEDICAL ADVERTISEMENTS IN THE LAY PAPERS

The increase of advertising by medical men in daily papers and even of placing posters on the streets, has been causing some anxiety in professional circles. Recently leaflets have been pasted on lamp-posts in Bucharest with inscriptions such as: "Medical Consultation Bureau. Cures genito-urinary and female and syphilitic diseases with guarantee. Diathermy. Ultra-violet rays. All kinds of injections, surgical operations, wound dressings. Analysis. Open the whole day from 8 A.M. to 9 P.M." The leaflet bears the address of the "Bureau" and has been duly stamped, to avoid fines for disregarding stamp duties, but is in gross disregard of the rule of the Medical Chamber against advertisements in newspapers or by leaflets or posters designed to attract patients. In a single edition of a daily paper recently, 25 medical advertisements appeared, including the following: (1) late physician at the dermato-venereal clinic at Odessa, who has acquired training as a specialist in Vienna, treats urinary, syphilitic, and venereal diseases with injections; (2) woman physician, cures female and venereal disease. One advertisement begins by stating that the advertiser cures hæmorrhoids with injections. He gives his name, adding that he is a Parisian specialist and that he can also cure venereal and female diseases. Another notes that on Wednesdays consultations are gratuitous. The Medical Chamber is taking energetic measures to stop such advertisements, which are detrimental to the reputation of the whole medical profession. They are drafting a Bill designed to ensure that papers, before accepting advertisements of a medical character, shall exercise some censorship.

SACCHARIN BECOMES A STATE MONOPOLY

A monopoly in respect of the purchase and sale of saccharin has been established in order to check the smuggling of large quantities of saccharin into the country, particularly from Czechoslovakia; this smuggling is held responsible for a notable diminution in the consumption of sugar. It is likely that the price of saccharin will be much increased, for it will be subject to a high tax. The medical journals are protesting against this exorbitant taxation of a drug which is used by a very large number of patients, besides having a wide application in pharmacy for the sweetening of various preparations.

HIGH BLOOD PRESSURE IN JUVENILE SUBJECTS

At a recent meeting of the Bucharest Medical Society Dr. Saragea gave case reports of three juvenile patients with high blood pressure. He pointed out that blood pressure rises after birth to some extent in proportion with age. An abnormally high pressure, he said, is not unusual in adolescents, and it may occur even in children, when it often accompanies renal inflammation and causes severe symptoms. The patients complain of frequent acute headaches and are pale and œdematous round the eyelids. Unlike adult patients with high blood pressure children become apathetic and languid. Epistaxis, insomnia, loss of appetite, and digestive troubles may occur. The disorder takes a quick course, and in consequence of renal insufficiency may end fatally. Saragea's patients were aged 18, 21, and 23 years respectively. He believes that in many cases irritation of the sympathetic nervous system is responsible for the rise of the blood pressure.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

THE following appointments are notified: Surg. Comdr. A. H. Joy to *Victory* for R.N.B. Surg. Lt. C. R. Boland to *Hood*. Surg. Lt. J. J. Benson to *Ark Royal*.

ROYAL ARMY MEDICAL CORPS

The King has approved the appointment of Maj.-Gen. W. H. S. Nickerson, V.C., C.B., C.M.G., as Colonel Commandant, R.A.M.C., in succession to Maj.-Gen. Sir S. Guise Guise-Moores, K.C.B., K.C.V.O., C.M.G., who has attained the age limit.

Capts. (temp. commns.) C. M. Row and J. H. Robinson to be Majs.

ARMY RESERVE OF OFFICERS

Maj. W. T. Hare resigns his commn. and retains the rank of Maj.

ROYAL AIR FORCE

Dental Branch.—Flying Offr. E. Sharp is promoted to the rank of Flight Lt.

PUBLIC HEALTH SERVICES

Scarlet Fever : a Hospital Problem

THROUGHOUT England and Wales the number of cases of scarlet fever had fallen from 111,077 in 1930 to 81,569 in 1931, but in 1932 the figure rose slightly to 84,982. So far, the record of notifications in 1933 indicates that there will be a further rise this year. Comparing the incidence during the current year in the great towns, up to the week ended Nov. 25th, with the corresponding period of 1932, we find that 67,002 cases have already been notified as against 45,204. In the last of these weeks the incidence throughout the whole country was actually 187 per cent. of expectation based on the median value for the corresponding weeks of the nine years 1924–32.[1] In his annual report for 1931, Sir George Newman drew attention to the uncontrollable character of scarlet fever as regards prevalence. A study of the administrative problems of this disease carried out in 1927 led to the conclusion that hospital isolation had had no effect on its incidence,[2] and a more recent investigation, carried out by Miss Hilda Woods for the Medical Research Council, not only confirms this view, but fails to find confirmation of the opinion of some epidemiologists that isolation and other administrative methods of control are entitled to any credit for the very marked decline in fatality which has occurred in modern times and more especially since 1918.[3] Nevertheless, the news from different parts of the country indicates that the increased prevalence of scarlet fever is the signal for agitation about the adequacy of hospital accommodation. For instance, after much local pressure (in which, incidentally, the need for disinfection was, as usual, strongly advocated), Lanchester joint hospital board, in North-West Durham, have opened an emergency hospital; and failure to isolate cases at Kirk-Newton was the occasion of some controversy at a meeting of the Glendale rural district council in October. It is a fact that the great bulk of hospital accommodation in both urban and rural areas is occupied by cases of scarlet fever, and that when the incidence of this disease is low there is seldom any complaint as to the number of beds available for infectious disease. The Ray Committee [4] suggested that a less stringent policy of hospital isolation might be considered, advocating also the practice, which is now almost universal, of shortening the period of isolation. Nevertheless, a perusal of the annual reports of medical officers of health for 1932 shows that hospitalisation of scarlet fever is almost automatic in a large majority of populous areas.

ROUTINE HOSPITALISATION

It is probably as a consequence of the ample provision made in the past by the Metropolitan Asylums Board that in most of the metropolitan boroughs well over 90 per cent. of the cases of scarlet fever are removed to hospital. In greater London a similar policy appears to be favoured : for instance, the percentage in East Ham is 92, West Ham 89, and Willesden 89, although Croydon and Ealing have a somewhat lower proportion—viz., 83 and 75 respectively. When the provincial towns are taken at random the percentage admitted to hospital is as follows : Chester 96, Huddersfield 96, Newcastle 96, Leeds 95, Salford 93, Birkenhead 92, Swansea 91, Portsmouth 89, Liverpool 87, Sheffield 86, Stoke 85, Hull 85, Cardiff 84, Bradford 81, Blackburn 81, Manchester 80, Southampton 80, Birmingham 79, Plymouth 77, Stockport 76, Bristol 74, Leicester 73, Newport 73, and Bolton 71. On the other hand Rhondda treat in hospital only 68 and Brighton 54 per cent. of cases. In Scottish towns hospital provision has for many years been ample and of a high standard, whereas the housing conditions create almost insuperable difficulties as regards isolation. Most cases of scarlet fever have been removed to hospital, even in county areas. For instance, 94 per cent. were so dealt with in Stirlingshire in 1932. In Glasgow the percentage was 85, an unusually low proportion, to which further reference will be made.

When two large English counties are considered, the West Riding of Yorkshire and Lancashire, the results are rather interesting. In both counties the incidence of scarlet fever was considerably lower in 1932 than in 1929. In the West Riding 3261 cases were notified in 1932 and in Lancashire 3349, but 90·3 per cent. of the former went to hospital as compared with 61·8 of the latter. Of 148 districts in the West Riding, 59 (having cases of scarlet fever) treated 100 per cent. of them in hospital, whereas only 10 of 116 districts in Lancashire achieved the same perfection of isolation. Even in the West Riding patients were not removed to hospital in anything like uniform proportion in different districts. For instance, Thorne R.D.C. had 32 cases, all treated at home, and only a half or fewer of the small numbers of cases in Birkenshaw, Earby, Elland, and Greetland urban districts were removed. The variation of hospitalisation in some of the Lancashire districts is shown in the following Table, in which districts have been included more or less at random :—

District.	Cases notified.	Cases removed to hospital.	Percentage removed to hospital.
Widnes (B.)	83	80	96
Chorley (B.)	140	121	86
Middleton (B.)	101	76	75
Ashton-under-Lyne (B.) ..	161	84	52
Rawtenstall (B.)	54	2	4
Walton-le-Dale (U.D.) ..	32	32	100
Withnell (U.D.)	2	2	100
Stretford (U.D.)	146	76	52
Turton (U.D.)	40	—	—
Limesdale (R.D.)	3	3	100
Whiston (R.D.)	9	8	89
Preston (R.D.)	109	86	79
Limehurst (R.D.) ..	13	—	—

HOME VERSUS HOSPITAL TREATMENT

There can be no uniformity of policy underlying these differences. Small and impoverished districts, which have not entered into combination or agreement with other areas, have usually little accommodation for fevers and their cases have to remain at home. Towns with progressive councils are in a position to isolate a large proportion of their cases in periods of low or average prevalence, and do so. When the incidence of scarlet fever becomes formidable authorities are forced to select the gravest cases, or those from the poorest homes, or most overcrowded for admission. There appears to be little evidence that home isolation of the present type of scarlatina, whether deliberate or perforce, is attended with any serious result. In Glasgow, abnormally high prevalence has led to a degree of selection in 1931 and 1932 hitherto uncontemplated, and Dr. A. S. M. Macgregor, in his report for the latter year, says that "the broad data available and the experience gained uggest that a judicious policy of home treatment of scarlet fever is permissible as a routine to a greater extent than has been customary in the past." At Stockport, Dr. E. K. Macdonald pleads for the *minimum of hospital isolation of scarlet fever in order* to set free accommodation for the more serious cases of measles and whooping-cough, and Dr. Killick Millard, of Leicester, points out that a great many of the cases usually treated in hospital could quite well be left at home.

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[1] Registrar-General's Weekly Return 1933, No. 47.

[2] Ministry of Health. Reports on Public Health and Medical Subjects No. 35, 1927.

[3] Medical Research Council, Special Report Series No. 180.

[4] Report on Local Expenditure (England and Wales), 1932. See THE LANCET, 1932, ii., 1241.

There is no doubt that these expressions of opinion would receive endorsement from most public health administrators. The difficulty of putting them into practice, however, is real. Hospitals for the acute communicable diseases, especially in large towns, have become efficiently managed and attractive places, and the public are glad to let their children go to them—perhaps more willing when they are not seriously ill but merely require isolation. The patients are allowed a measure of freedom and physical exercise during convalescence which it is hard to arrange under conditions of rigid isolation at home. Moreover, there is freedom for the other members of the family to attend school which can rarely be permitted if the instructions of the Ministry of Health and the Board of Education are strictly observed in the case of patients treated at home. Medical practitioners, too, find it inconvenient to attend scarlet fever while they are responsible for the care of maternity and other cases liable to streptococcal infection. For these reasons, it would appear that only after prolonged education of the public, a realisation on the part of general practitioners that transference of infection from mild scarlatina is easily prevented, and some relaxation of the requirements of Government departments as regards contacts, can we hope for any serious reduction in the very large public expenditure which scarlet fever, in its present mild form, seems unjustifiably to entail. In the meantime public authorities who are planning their hospital accommodation in compliance with the requirements of the Local Government Act, 1929, might have in mind the possibility, at least, that past and present policy as regard the institutional isolation of scarlet fever may have to be modified if the disease remains benign in character.

Slaughter-house Reform

In the Benjamin Ward Richardson lecture for 1933 Prof. J. H. Jones points out that slaughtering is at present conducted in small private slaughter-houses or in municipal slaughter-houses. The former are inefficient, not in the sense that the owners are personally inefficient, but in the sense that the scale of organisation prevents the proper utilisation of by-products and in other ways adds to expenses. Municipal slaughter-houses also work under serious disadvantages. Not only are they on too small a scale but they are merely a collection of stalls utilised by private butchers. Moreover, in England the municipal slaughter-house competes with private slaughter-houses, so that it cannot enjoy the economies associated with municipal organisation.

The Committee on the Slaughtering of Livestock recommended a scheme which was based upon regional monopoly. The larger the scale of production, the greater the possibility of reducing the actual cost of slaughtering; the limit of size extends beyond that which calls for practical consideration. There are two other limiting factors—namely, the cost of collection and the cost of distribution. The latter may be so great that in remote rural areas the existing type of slaughter-house may best serve the needs of the people. In the case of large and populous areas Prof. Jones considers it desirable to build a slaughter-house of the type now recommended, the limiting factor being the cost of collecting and assembling animals for slaughter. The committee favoured the principle of regional monopoly. It recommended the *appointment of a National Slaughter-Houses* Board, a statutory non-profit-making body to prepare regional schemes to be operated by regional authorities. It was understood that such a region would in nearly all cases represent a combination of existing units of local administration. The regional slaughtering authorities or operating body might be either joint boards of local authorities or existing associations prepared to provide their own finance. The central slaughter-house would possess a monopoly of supply for the region and provision would be made both to safeguard the public against excessive charges and to compensate the owners of private slaughter-houses where such compensation was deemed to be equitable. The regional authority would provide the service of the slaughter of animals and the transport of meat to the centres of retail distribution. It would not itself purchase animals and sell meat; on the other hand, it would purchase and itself work up the by-products. On one side it would therefore be a *service organisation*, and, *on the other, a trading* concern. Such a scheme, Prof. Jones says, would enable the process of slaughter to be so organised as to bring within reach all the available technical advantages of large-scale operation; waste would be eliminated and a steady supply would be made available of by-products which are now either completely wasted or are produced in a very inefficient manner. Moreover, it would enormously facilitate the inspection of meat and thereby raise the average quality without injury to those particular qualities that now command special markets. Hitherto, Prof. Jones believes, the powers of municipalities have been excessively restricted in England with the result that public slaughter-houses have almost always been run at a loss, the average loss of those making separate returns being nearly one-third of the total expenditure. What is new in the proposed scheme, he explains, *is the introduction of regional* units of supply working under the control of a national board. This has been rendered inevitable by the nature of economic development.

The lecture is delivered annually under the auspices of the Model Abattoir Society, whose president is Sir James Crichton Browne, M.D., F.R.S. The objects of the society are to ensure: (1) the *merciful* treatment of animals killed for food; (2) the *prevention of the sale of tainted and poisonous meat*; and (3) the avoidance of waste, inevitable in ill-designed slaughter-houses. Applications for membership may be sent to Brig.-General J. Charteris at 90, Buckingham Palace-road, London, S.W.1.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 16TH. 1933

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 4 (last week 9); scarlet fever, 3938; diphtheria, 1300; enteric fever, 14; acute pneumonia (primary or influenzal), 1296; puerperal fever, 42; puerperal pyrexia, 126; cerebro-spinal fever, 18; acute polio-myelitis, 10; encephalitis lethargica, 7; dysentery, 19; ophthalmia neonatorum, 76. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the

London County Council on Dec. 19th–20th was as follows: Small-pox 16 under treatment, 2 under observation (last week 14 and 0 respectively); scarlet fever, 2981; diphtheria, 2101; enteric fever, 16; measles, 565; whooping-cough, 206; puerperal fever, 13 mothers (plus 6 babies); encephalitis lethargica, 257; poliomyelitis, 5; "other diseases," 231. At St. Margaret's Hospital there were 13 babies (plus 9 mothers) with ophthalmia neonatorum.

Deaths.—In 118 great towns, including London, there was no death from small-pox, 2 (1) from enteric fever, 23 (6) from measles, 11 (2) from scarlet fever, 21 (6) from whooping-cough, 59 (16) from diphtheria, 50 (13) from diarrhœa and enteritis under two years, and 95 (19) from influenza. The figures in parentheses are those for London itself.

The only death from enteric fever outside London occurred at Huddersfield. Manchester reported 6 deaths from measles; Liverpool 4 from scarlet fever. Of the fatal cases of diphtheria 4 occurred at Liverpool, 3 each at Dagenham and Huddersfield. Five deaths were attributed to influenza at Manchester and Sheffield, 4 at Liverpool, Oldham, and Birmingham.

The number of stillbirths notified during the week was 290 (corresponding to a rate of 52 per 1000 total births), including 45 in London.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Christmas Recess

On Thursday, Dec. 21st, both Houses of Parliament adjourned for the Christmas recess. Parliament will reassemble on Jan. 29th, 1934.

New Bills

In the House of Lords on Wednesday, Dec. 20th, Lord DAWSON introduced a Bill to restrict the sale and display of advertisements of contraceptives. The Bill was read a first time.

In the House of Commons on Thursday, Dec. 21st, Mr. E. BROWN, Secretary for Mines, introduced the Mining Industry (Welfare Fund) Bill, a measure to amend Section 20 of the Mining Industry Act, 1920, and the enactments amending that section.

In the House of Lords the Royal Assent was given to the Agricultural Marketing Act and other Acts.

Housing and Slum Clearance

In the House of Lords on Dec. 12th the Bishop of WINCHESTER asked the Government to state:—

(1) The number of houses, to be let at an inclusive rental not exceeding 10*s.* a week, required for the accommodation of those now living in the slums or in overcrowded conditions;

(2) The number of such houses which the Government estimate will be provided (*a*) by the local authorities under the five-year slum clearance scheme, (*b*) by local authorities without a subsidy, (*c*) by private enterprise; and

(3) Whether the Government propose to take action in accordance with the recommendations of the Moyne Report.

He said that the country to-day was conscious in a way in which it had never been before of the appalling nature of the slum problem. His real purpose was to ask the Government how far their policy was likely to succeed. There were many doubts and hesitations as to whether it was wide and comprehensive enough for the problem it was intended to solve. They could not separate the slum problem from overcrowding. The overcrowded houses of to-day were the slums of to-morrow. He did not ask the Government to reverse their policy, but to strengthen, widen, and build upon it. He urged the Government to take action on the lines of the Moyne Report and to consider more carefully the arguments for a national housing corporation which would be able to act where local authorities and private enterprise failed.

Lord MOYNE agreed that there was an extraordinary weight of public opinion on this subject. If the Government could find a way of making a great advance in the provision of houses there would be no party that would discourage the expenditure of the money that might be involved.

Lord DICKINSON said that the position in regard to overcrowding was worse than when the Royal Commission reported in 1884. It had spread into districts where it ought to have been possible to prevent it.

Lord DYNEVOR said that there ought to be a national housing board with full powers to deal with the slums in both town and country.

Viscount GAGE, Lord in Waiting, replying to the debate, said that so far the local authorities had submitted that 210,000 houses ought to be pulled down during the next five years. If that were done and the inhabitants housed properly elsewhere a very great deal would have been effected. The Minister of Health was satisfied that the Government had taken the course best calculated to promote the supply of small houses to let. Any disturbance due to the cessation of the Wheatley subsidy had been guarded against as carefully as possible. It would be impossible at present to give accurate figures of the new houses that were to be let without a house-to-house inquiry. A very important change had been brought about by the pool of "C" houses which the Government had decided to maintain for the next five years. There would be no necessity for people who had no other incentive to remain in an overcrowded locality to be afraid of their rents being raised if they went somewhere else. In view of this fact the Ministry felt that the more rigid application of by-laws and even the revision of existing by-laws might be contemplated in certain circumstances as a remedy. What reason was there for assuming that a national housing board would be able to build more cheaply than the local authorities? Would not an institution of that sort interfere very largely with the programme of the Ministry of Health? He suggested that the Government's policy was more in the interests of those they were desiring to help than a policy which might raise housing costs and place on the shoulders of industry a large additional burden.

The Bishop of WINCHESTER said it was almost inconceivable that a Government Department should launch out on a great housing campaign and not have counted the cost or realised the number of houses that would have to be dealt with. He had hoped that Lord Gage would have been able to say that the Minister of Health not only intended to carry out the policy recommended by the Moyne Committee, but was resolved to carry it out at the earliest possible moment.

Dyes and Dermatitis

In the House of Commons on Dec. 18th on the motion for the second reading of the Dyestuffs (Import Regulation) Bill—to place on a permanent basis the prohibition in force since 1921 of importation into the United Kingdom of dyestuffs and intermediary products—Dr. O'DONOVAN said that between 1913 and 1932 there had been a phenomenal rise in the incidence in workers and wearers of dye dermatitis. That was to say, that although our home trade was gratifyingly great we had not yet approached the perfectly safe manufacture that the foreigner seemed to have reached. It was well known that both dyes and explosives had both internally and externally very grave risks. Internal risks were shown in sometimes fatal toxic jaundice, which was notifiable to the Home Office. External risk consisted of irritable, painful, disfiguring, and disabling dermatitis. It was met with too frequently to-day among dye-workers and those who wore the products of the dye industries. In Wigan Dr. Prosser White had made an international reputation by his writings on industrial dermatitis. Dr. Ingram, at Leeds University, was drawing attention to this problem. In London Dr. Parsons, of the Ministry of Health, had issued an official memorandum on the subject of fur-dye dermatitis. Last July he (Dr. O'Donovan) had himself presided at the Dublin meeting of the B.M.A. over the skin section, which was devoted largely to the consideration of dye-dermatitis, because the heavy incidence of this disease was a source of trouble to the doctors and of most expensive litigation to those who were engaged in the manufacture and trade. He hoped that in the committee stage the Bill might be drafted so that the experience of the Ministry of Health and of the medical department of the Home Office might be drawn upon, and a certificate of safety in home use required before the import of any imported dye was prohibited.

Dr. **Burgin**, in replying, said that Dr. O'Donovan, who was known to be a skin specialist, was very interesting on the subject of dermatitis, but he wondered whether Dr. O'Donovan really meant that on a patient suffering from dermatitis being brought into a hospital he could tell at sight whether the dermatitis was caused by a foreign or by a home-made dye.

Dr. **O'Donovan**: On the information which the Parliamentary Secretary has given us, I am certain it could be produced by a home-made dye.

HOUSE OF COMMONS

WEDNESDAY, DEC. 13TH

Highlands and Islands Medical Service

Mr. **Kirkwood** asked the Secretary of State for Scotland whether, in connexion with the Highland and Islands Medical Service, he had received a report on the air-ferries ambulance for the Western Isles; and whether he was going to meet this urgent need for the people in the Western Isles.—Mr. **Skelton** (Under-Secretary of State for Scotland) replied: This matter has been investigated, and arrangements are being made to give assistance from the Highlands and Islands (Medical Service) Fund in cases of need and emergency towards costs incurred on the hire of aeroplanes to remove persons from the Highlands and Islands to central hospitals. The Department of Health are also in communication with the County Council of Argyll as to the possibility of organising such a service for any parts of the county, including the islands where conditions permit.

Mr. **Ramsay**: Is my hon. friend aware that one of the reasons which actuated the late Socialist Government in evacuating the island of St. Kilda was the heavy cost of removing patients to the mainland; and is he also aware that the representations which have been made to the Scottish Office by the local people through their own representative has always been in the direction of more efficient hospital service with transport of patients to the mainland only in very exceptional circumstances?

No answer was given.

MONDAY, DEC. 18TH

Child Marriage in India

Miss **Rathbone** asked the Secretary of State for India whether, in view of the disregard of the Sarda Act revealed by the Indian Census Reports of 1931, he would ask the Government of India or the provincial governments what steps they had taken, or proposed to take, to educate public opinion in India as to the evils of child marriage, and to carry into effect the other administrative measures recommended by the Age of Consent Committee as essential to the enforcement of legislation in restraint of child marriage.—Sir S. **Hoare** replied: I have received from the Government of India reports which show that the recommendations of the Age of Consent Committee have been very carefully considered by the Government of India and by local governments. There is a consensus of opinion that educative propaganda regarding the evils of child marriage is desirable, but a general agreement to such propaganda is best left to non-official agencies. With regard to the other administrative measures recommended by the Age of Consent Committee the position is that local governments are in full sympathy with the need for reform and will take such action as may appear to them feasible, but for various reasons most of the specific proposals are in present conditions not practicable.

Miss **Rathbone**: Will the right hon. gentleman inform the House what unofficial agencies there are which cover anything like the whole area in India?

Sir S. **Hoare**: I certainly would not suggest that at the moment there are agencies of this kind which can cover the whole field. I hope they will increase and multiply, but at the moment the provincial governments think that non-official agencies are the best agencies for the work.

TUESDAY, DEC. 19TH

Automatic Gas Alarms in Mines

Mr. **Tom Smith** asked the Secretary for Mines whether he had completed his consultation with the various organisations regarding the use of automatic gas alarms underground; and, if so, what action he intended to take in the matter.—Mr. E. **Brown** replied: I have not fully completed my consultation with the various organisations, but the discussions have reached a point at which I feel able to make the following statement on the subject. The desirability of providing means to enable underground workmen at any time to supplement the tests as to the safety of the atmosphere which are made from time to time by the deputies and other officials, is a problem of safety which was created through the displacement of the flame safety lamp by the electric safety lamp. It was studied in 1922 by the Miners' Lamp Committee, and they recommended in effect that the practice already existing at some mines where electric lamps were in general use of providing a proportion of the workmen with flame safety lamps should be made generally compulsory by regulation; the committee further recommended that workmen so provided should be instructed and qualified in the use of the flame safety lamp as a gas detector. No regulations were made to give effect to these recommendations; opinions in the industry were sharply divided, and there was not generally shown at that time that willingness to accept the new duties which the committee pointed out to be an essential condition of effective action. Since that time the problem has grown both in size and in complexity, and other forms of detector (including the automatic detector) have been developed as an alternative to the flame safety lamp. Moreover, I propose to make, early next year, regulations, already under discussion, to secure improved lighting. These regulations are likely to involve the replacement of a large proportion of the safety lamps now in use at and about the coal face by lamps of much higher candle-power, and in this respect are likely therefore to have an important bearing on the problem. In these circumstances I think it is necessary that a fresh attempt should now be made to deal with it, and I have given instructions for the framing of a draft of regulations to deal with the matter comprehensively, and as definitely as the very wide variation in the relevant conditions at different mines will permit. Following the usual procedure it is my intention as soon as this draft is ready to communicate it to the representative associations of the industry for their consideration and subsequent discussion with me.

Insulin

Dr. **O'Donovan** asked the President of the Board of Trade if, in view of the recent decision to limit the importation of insulin, he would inquire into and inform the House as to the present position of the manufacture of insulin in this country.—Mr. **Runciman** replied: I understand that British makers have for some time supplied a large part of the home demand for insulin, and maintained a considerable export trade; that they now have large stocks; and that their output could be readily increased, if necessary.

Dr. **Howitt** asked the Lord President of the Council if he would direct the Medical Research Council to investigate and report upon the possibilities of the manufacture of insulin under licence and its cheaper supply in this country.—Mr. BALDWIN replied: I understand that the production of insulin has been brought to a high state of efficiency, not least in this country, and that insulin of British manufacture is available to the public here at a small fraction of the original price of ten years ago. I am advised that there is no present prospect of scientific research leading to further material decrease in the economic cost of production. As there are no longer any patent rights in the process, licences in this particular respect are not required by manufacturers.

Sir F. FREMANTLE asked if it was not the fact that British insulin was being sold at 2*s.* per 100 units and foreign insulin at 1*s.* 5*d.*, and that there was a promise of that going down from 1*s.* 5*d.* to 1*s.* 3*d.* if the tax were removed. Therefore there was a prospect of the price being lowered.

Mr. BALDWIN said he would require notice as to the prices.

Sir F. FREMANTLE asked the Minister of Health if he could make any estimate of the increased cost that would fall on hospitals and institutions under the control of his department as the result of the recent decision limiting the importation of insulin.—Mr. SHAKESPEARE replied: My hon. friend will no doubt have seen recent announcements to the effect that no increase in the prices of the principal foreign supply of insulin will be made, while, as indicated in a reply given on behalf of my right hon. friend the President of the Board of Trade on Dec. 11th, an undertaking has been given on behalf of the British makers that their prices will not be raised as a result of the new duty. Accordingly, on the information at present before him my right. hon. friend sees no reason to suppose that any increased cost will fall upon local authorities responsible for the management of hospitals, but he will keep in touch with the position.

Scientific Research

Sir F. FREMANTLE asked the Lord President of the Council the amount expended by the department of Scientific and Industrial Research for the purposes of their own research institutions, with its percentage to the total grant; and the amount allocated by the department to the research associations, with its percentage to the total grant to the department.—Mr. BALDWIN replied: The amount provided in the estimates for the current year for expenditure by the department of Scientific and Industrial Research for the purposes of their own research institutions is £392,932, representing 76 per cent. of the total grant of the department; the amount allocated by the department to research associations in the same estimates is £67,000, representing 13 per cent. of the total grant.

Sir F. FREMANTLE asked the Lord President of the Council the amounts expended by the research associations receiving grants from the department of Scientific and Industrial Research in the last financial year on research in their own laboratories and on work passed on by them to the universities and outside research institutes respectively, with the percentage of such expenditure in either case to the total grants made to them by the department.—Mr. BALDWIN replied: The total amount expended by grant-aided research associations in their own laboratories as shown in each case by the accounts of the last financial year of the association was £225,061; and on research undertaken extramurally, £37,910. These sums represent 350 per cent. and 60 per cent. respectively of the total of the grants made by the department to the individual associations in those years.

Overcrowding

Sir ALFRED BEIT asked the Minister of Health the number of persons in England and Wales living more than three to a room.—Mr. SHAKESPEARE replied: The number of such persons enumerated at the 1931 census was 565,869. No later figures are available.

Firearms and Public Safety

Sir ASSHETON POWNALL asked the Home Secretary whether he was prepared to set up an expert committee to consider what amendments were desirable to the Firearms Act, 1920, in the interests of public safety.—Sir J. GILMOUR replied: I propose to appoint a committee with the following terms of reference: "To consider the various types of firearms and similar weapons capable of being used for the discharge of missiles or noxious substances, and ammunition therefor, and to inquire and report whether, in the interests of public safety, any amendment of the existing law is necessary or desirable in respect of the definition or classification of such weapons and ammunition." Sir Archibald Bodkin has consented to act as chairman of the committee, and I hope it will be possible to complete its constitution in the course of a few days.

Slum Clearance in Paddington

Mr. GROVES asked the Minister of Health when work in connexion with slum clearance in Paddington would begin; and how many homes would be provided.—Sir HILTON YOUNG replied: The L.C.C. have already declared the Clarendon-street area in Paddington as an improvement area, from which it is estimated that 176 persons will be displaced. Rehousing will be provided in 40 new dwellings which are in course of erection on the Wormholt Estate, Hammersmith. The borough council have provided eight dwellings to rehouse persons displaced from individual unfit houses demolished or parts of houses closed.

WEDNESDAY, DEC. 20TH

Water-supply at Dartmouth Naval College

Vice-Admiral TAYLOR asked the First Lord of the Admiralty whether his attention had been called to the unsatisfactory water-supply to the Royal Naval College at Dartmouth; and whether he proposed to take any steps in the matter.—Sir B. EYRES-MONSELL replied: Yes, Sir. The unsatisfactory state of the supply has already been represented by both the Admiralty and the Ministry of Health to the local water authority, who are considering schemes for improving it.

Vice-Admiral TAYLOR: In view of the great importance of a good water-supply for the cadets can the right hon. gentleman say when the matter will be put right? I understand that the water has been impure for a considerable time.

Sir B. EYRES-MONSELL: The local authorities are considering a scheme, but it is not easy to find an alternative source of supply. I ought to add that in the meantime the water is being boiled and chlorinated.

Road Traffic Act and Third Party Risks

Sir GEORGE JONES asked the Minister of Transport whether, with a view to securing that insurers of third-party risks under the Road Traffic Act should be in a sound financial position, he would consider introducing legislation to increase the deposit required under the Act.—Mr. OLIVER STANLEY replied: I will bear my hon. friend's suggestion in mind in the consideration which I am giving to the question whether additional safeguards are required to ensure that, so far as possible, all legitimate claims for compensation in connexion with motor accidents are met.

Constitution of Durham University: Royal Commission to be Appointed

Mr. MARTIN asked the Chancellor of the Exchequer whether his attention had been called to the controversies within the University of Durham which had now persisted for a number of years and had caused much public attention in the North of England; and whether the Government proposed to take any action in the matter.—Mr. CHAMBERLAIN replied: The answer to the first part of the question is in the affirmative. As regards the second part the Government have decided to set up a Royal Commission to inquire into the organisation of the University of Durham and its constituent colleges. The terms of reference of the commission and its personnel will be announced in due course.

Mr. MARTIN: Will any time limit be set on the work of the commission?

Mr. CHAMBERLAIN: No, I do not think so.

THURSDAY, DEC. 21ST

Vagrancy and Sleeping Out

Brigadier-General Spears asked the Home Secretary to state his decision with regard to the repeal of Section 4 of the Vagrancy Act, which made sleeping out a penal offence.—Sir John Gilmour replied: I recognise that the provision to which my hon. friend refers is open to criticism in its present form, and I am investigating the question whether the circumstances in which proceedings are necessary or desirable can be more closely defined. I hope it may be possible to find means of limiting the application of the provision so as to ensure that proceedings shall only be taken in cases where action is desirable in the interests of the community or of the individual concerned.

Canteens for Necessitous School-children

Sir William Jenkins asked the Parliamentary Secretary to the Board of Education if, in view of the distress that prevails in Glamorgan, he would consider a special grant to the education authorities for the purpose of setting up school canteens to provide one or two meals a day for all school-children.—Mr. Herwald Ramsbotham replied: The Board of Education already pay 50 per cent. of the expenditure on the provision of meals reasonably incurred by local education authorities, and my noble friend sees no reason to consider the payment of a special additional grant to local education authorities in a particular area. In any case, the provision of free meals for all school-children in an area, irrespective of their physical condition or the incomes of their parents, appears to be outside the intentions of the Education Act.

Sir William Jenkins asked the Parliamentary Secretary to the Board of Education what recommendations were made to local education authorities in regard to meals and food provided for necessitous children under Sections 82 to 85 of the Education Act, 1921, ordinarily and in special cases, respectively; and what was the Board's interpretation of a meal within the meaning of the Education Act, 1921.—Mr. Herwald Ramsbotham replied: The provision of meals for school-children has been frequently discussed in the annual reports of the Board's Chief Medical Officer, to which my noble friend would refer the hon. Member. Pages 134 to 138 of the report for 1932 contain a number of recommendations in regard to the administration of this service. The Board regard ordinary meals—milk, cod-liver oil, and certain concentrated foods—as meals for the purpose of Sections 82 to 85 of the Education Act, 1921.

Water Shortage

Mr. Levy asked the Minister of Health whether, in view of the growing seriousness of the water shortage in many districts, he contemplated taking special measures, in conjunction with the local authorities, to deal now with the emergency which had arisen.—Sir Hilton Young replied: I am keeping close watch on the position in conjunction with the local authorities. Though there is need for economy in the use of water because of the very exceptional shortage of rain, there is no ground for general alarm. I am urging special measures wherever practicable in those districts where the shortage is serious.

Milk Designations

Brigadier-General Clifton Brown asked the Minister of Health whether he had considered the recommendations of paragraphs 76 and 77 of the Milk Reorganisation Commission as to a revision in the designations of milk, so that the public might know what they were buying; and whether he would introduce legislation on this subject, including a standard to be laid down for accredited producers.—Sir Hilton Young replied: I am aware of the recommendations referred to, but I am not yet in a position to make any statement respecting legislation on this subject. With regard to accredited producers, I would refer my hon. friend to the reply given to him on Dec. 14th by the Minister of Agriculture.

Slum Clearance

Mr. John Wilmot asked the Minister of Health the number of separate housing authorities in England and Wales and how many of them had submitted schemes for slum clearance.—Sir Hilton Young replied: The number of authorities is 1717, of whom 1512 have made returns. The remaining 205 have informed me why they have not yet submitted returns. These cases as well as nil returns and the programmes the adequacy of which is in doubt are under consideration.

Mr. D. G. Somerville asked the Minister of Health to state those areas in which, as a result of recent legislation, slum clearance operations had started; and what arrangements in these cases had been made for rehousing the dispossessed tenants temporarily.—Sir Hilton Young replied: 655 orders submitted by 153 local authorities in respect of clearance areas have been confirmed. The actual evacuation of houses and the provision of new houses are ordinarily so timed as to make it unnecessary to provide temporary accommodation.

War Wound Disablement Pensions

Lieut.-Colonel Kerr asked the Minister of Pensions how many ex-Service men were receiving war-wound disablement pensions other than those totally disabled.—Major Tryon replied: At the end of March last approximately 447,000 disability pensions were in payment to ex-Service men, of which 29,400 were at the total disablement rate.

Scale of Relief to Children

Mr. McGovern asked the Secretary of State for Scotland the decision of his department on the request of the Glasgow public assistance committee's deputation at Edinburgh for the legal ruling on the proposal to raise the scale of relief to children of able-bodied persons by *1s. 6d.* per week extra, making *3s. 6d.* per week for each child.—Sir Godfrey Collins replied: I hope at a very early date to reply in writing, as requested by the deputation, to the question referred to.

Artificial Cream Prosecutions

Mr. Craven-Ellis asked the Minister of Agriculture how many prosecutions had taken place under the Artificial Cream Act, 1929; in how many of these cases had the prosecution resulted in conviction before the magistrates; and how many of such decisions had been reversed on appeal.—Sir Hilton Young replied: According to my information, which is not necessarily complete, there have been seven prosecutions in England and Wales under this Act. One was dismissed under the Probation of Offenders Act. In the other six the defendants were convicted, but in two instances the decision was reversed on appeal.

King George Hospital, Ilford.—At a dinner at the Mansion House last week Prince George urged the claims of this hospital and its extension fund. He pointed out that with only one bed for every 500 of the population served the hospital has the lowest proportionate total of beds per head of any hospital area in the country, yet Becontree and Dagenham are rapidly expanding. There are at present 150 beds, but it is hoped, as the result of the appeal, to increase them to 200 in the near future. During the evening it was announced that of the £25,000 required for the extension £22,550 has been received.

The late Dr. John Reynolds.—We announced last week the death of Dr. John Reynolds in his eighty-seventh year, after a very brief illness. He had practised in Brixton for half a century, was well known in the medical profession, and was associated also with Sir William Crookes in certain researches. He was the father of Dr. Russell Reynolds, physician in charge of the radiological department at Charing Cross Hospital, with whom he published in 1913 in our columns some striking examples of the value in staphylococcal infections of large doses of dilute sulphuric acid given internally.

CORRESPONDENCE

IMMUNISATION AGAINST TETANUS

To the Editor of THE LANCET

SIR,—Passive immunisation of the wounded during the Great War was introduced in October, 1914. Five hundred units of antitoxin were injected as soon as possible after the receipt of the wound; and during the last two years of the war it was recommended that the injection should be repeated at intervals of seven days for one month. The effect was immediate and striking. The incidence of tetanus among wounded in the home hospitals fell from 32 per 1000 in October, 1914, to 1·7 per 1000 in November, and among those who developed tetanus after injection the incubation period was much longer; the symptoms generally less severe, and the mortality-rate reduced by one half. But passive immunisation has certain obvious disadvantages.

1. Antitoxin may not be always available for use soon after the infliction of a wound; a delay of a few days will give the tetanus bacilli time to germinate and to liberate a certain amount of toxin.
2. Antitoxin in a foreign serum is rapidly eliminated from the blood, and will have disappeared within two or three weeks.
3. The first dose, although sufficient to neutralise the toxin that may be produced during its presence in the blood, will not necessarily lead to the destruction of the bacilli or their spores, some of which may germinate at a later period, perhaps after an operation.
4. The injection of foreign (horse) serum is followed by a greater or less degree of sensitisation to the serum—an anaphylactic state—which lasts for many years, and may be a serious inconvenience or even a danger to life if horse serum is injected at a later date.

Active immunisation is free from these objections. It is widely employed for protection against diphtheria and scarlet fever, which like tetanus produce their symptoms by means of toxin elaborated locally and conveyed to susceptible organs or tissues. There seems no adequate reason why it should not be generally employed to protect against tetanus. Its value has been thoroughly proved in immunisation of horses and laboratory animals, and it should be free from danger. Toxoid or anatoxin is toxin which by treating with formalin has been deprived of its toxicity while retaining its full antigenic property. Immunising with toxoid induces an immunity lasting for many months or even years. Since February, 1931, it has been officially adopted in the French army for prophylactic treatment of the wounded, and Dr. E. Sacquépée, the medical general inspector, speaks (Paris méd., 1933, xxiii., 491) of the assurance of lasting immunity given by the following method.

Three successive doses of 1·5 to 2·0 c.cm. of tetanus toxoid are given at intervals of two to three weeks. With the first injection a dose of antitoxic serum is also administered, to produce a temporary passive immunity before antitoxin can be produced in response to the antigen. 240 patients who had received this immunising treatment were tested six months later as to the antitoxic titre of their serum. This was found to vary frm 1 to 0·02 unit in the c.cm. of serum, the antitoxic unit being equivalent to 1000 M.L.D. for a guinea-pig of 350 g. More than half of the soldiers tested had a relatively high antitoxic content. One unit per c.cm. would represent about 3000 units in the circulating blood, and 0·02 unit about 60 units. Even this low titre would probably be sufficient to give a considerable degree of immunity, especially when one takes into consideration the sensitising effect upon the cells concerned in the production of antitoxin, and consequent increased response to a fresh antigenic stimulus.

Apparently, in the French army, prophylaxis by toxoid is only employed for the wounded; but surely it would be a wiser plan to immunise all soldiers before they are called out on active service, especially in countries such as India where tetanus is prevalent. If this method were generally adopted—immunisation before active service—the effect upon the incidence of tetanus should be at least as great and probably greater than that of prophylactic injections upon typhoid.—I am, Sir, yours faithfully,

HERBERT H. BROWN, M.D., F.R.C.S.

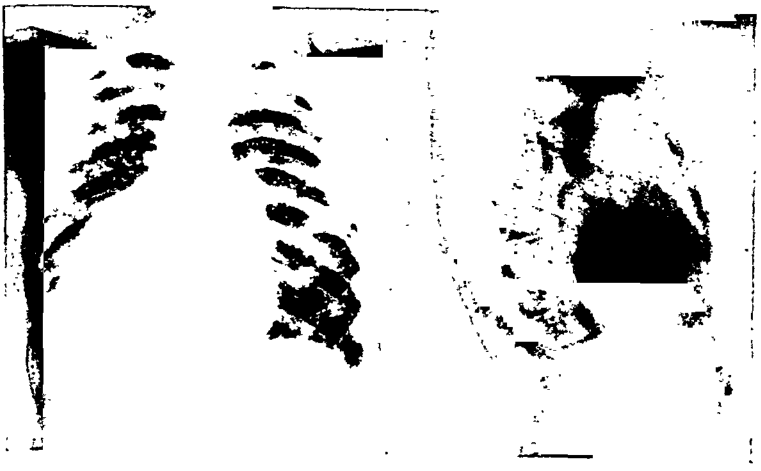
Worthing, Dec. 20th, 1933.

A CASE OF TUBERCULOUS PERICARDIAL EFFUSION

To the Editor of THE LANCET

SIR,—It may be of interest to record the progress of the case we described in your issue of July 1st under the above title. The patient was seen again in October, 1933. Since being examined in April he had worked for a time as a bus conductor, and found himself able to run without dyspnœa. He had no symptoms and felt very well, and his general condition was very good.

Clinical examination showed that the finger clubbing was still diminishing and there was a complete absence of cyanosis. The maximum apex-beat was at the site where a portion of the fourth costal cartilage had been removed. The heart dullness extended from just inside the left mid-clavicular line to right mid-clavicular line, and from the third costal cartilage down to and continuous with the liver dullness. The sounds were loudest at the gap in the cartilage, and if pressure was made with the stethoscope at this point a loud pericardial rub was heard. Over the rest of the precordium the heart sounds were distant, being conducted towards the right axilla. The



Radiograms showing the extent of the pericardial shadow.

rhythm was regular. The percussion note at the left apex was slightly impaired, and there were no moist sounds.

The accompanying radiograms show that the pericardial shadow now extends from just inside the left mid-clavicular line to just outside the right mid-clavicular line, and from the diaphragm to the level of the third costal cartilage. It measures 14 cm. high by 17 cm. wide. The right border is irregular and appears adherent in several places and extends down to obscure right costal phrenic angle. The lateral view shows the shadow extending from the sternum anteriorly to within 2 cm. from the anterior border of the spine posteriorly, measuring 9·5 cm. at the widest diameter. The shadow appears almost uniformly dense, and no fluid level can be made out. It is interesting to note that the pericardial sac has contracted considerably, and that the peculiar torsion still persists, the greater diameter still being across the right side of the chest.

We are, Sir, yours faithfully,
A. ADAMS,
F. S. HAWKINS.

North Wales Sanatorium,
Denbigh, Dec. 16th, 1933.

OCULAR CONDITIONS IN DIABETES

To the Editor of THE LANCET

SIR,—In the annotation under this title in THE LANCET of Dec. 23rd you state "A reduction in intra-ocular tension occurs in a large percentage of cases of diabetic coma. The effect of an overdose of insulin is to produce a condition which resembles coma, and it is not always easy . . . to distinguish between the two states. The soft eye might therefore be an important point in diagnosis, but there is no convincing evidence on this point." There is, however, evidence from another aspect, for Weichmann and Koch demonstrated that in *hypoglycæmia* the ocular tension decreases as the blood-sugar falls (Deut. Arch. f. klin. Med., 1928, clx., 361). It would therefore seem that a "soft eye" is likely to be present, both in diabetic coma and in insulin coma, and is probably dependent on the state of coma per se; at any rate it affords no diagnostic criterion.

I am, Sir, yours faithfully,
G. M. WAUCHOPE.

Hove, December 23rd, 1933.

MENTAL DISORDER FOLLOWING HEAD INJURY

To the Editor of THE LANCET

SIR,—In the issue of THE LANCET for Dec. 23rd (p. 1443) a medico-legal case was reported under this heading. The patient, aged 53, as far as ascertainable hitherto healthy and mentally sound, was struck on the head in an accident, resulting in a slight but painful swelling in the parietal region and certain mental symptoms, which the medical witnesses called on his behalf attributed to the injury, whilst the doctors for the defendants, against whom damages were claimed for negligence, declared the symptoms to correspond to those of the depressive state of manic-depressive recurrent insanity, and in no way resulting from the accident.

The witnesses for the defence declared that the patient was in the melancholic stage of manic-depressive insanity, and this diagnosis may account for their denial that the mental disorder could have been caused by the accident; for manic-depressive insanity does not usually result from head injury. The view expressed by the witnesses for the plaintiff that the mental symptoms were connected with the injury is supported by the number of similar cases quoted by me in which complete and prompt recovery took place after surgical operation. For this reason I have advocated exploratory trephining in cases of cranial injury followed by insanity.

According to my cases, parietal injury most often leads to "melancholia" of some sort. True, we can get melancholia in injury of other parts of the brain, especially in injury of the frontal lobes; but such cases are less common and there are definite points of diagnosis.

I am, Sir, yours faithfully,
BERNARD HOLLANDER.

Wimpole-street, W., Dec. 27th, 1933.

*** Dr. Hollander submitted points from a series of cases under his own care, or recorded by others, in support of his views.—ED. L.

CLIMATIC BUBO

To the Editor of THE LANCET

SIR,—Dr. H. S. Stannus, in the last paragraph of his kindly criticism of our observations on the treatment of climatic bubo and allied diseases, states that we do not explain what the well-marked though transitory reaction (following intravenous injection of tartar emetic) consists of, and asks whether this mode of treatment is not really a form of shock therapy. It is regretted that we did not make clear what the reaction consists of. It is given in detail as the reaction we attempted to avoid in the original method of administration—viz., "a dull aching at the elbow and shoulder of the arm in which the injection is being given, and often after the injection is finished laryngeal irritation with violent coughing. Nausea and vomiting also may rarely be caused." As regards the second point, Dr. Stannus's speculation as to whether tartar emetic treatment is in reality a form of shock therapy is interesting; at any rate, in none of our cases was there a rise of temperature following the injection.

I am, Sir, yours faithfully,
P. L. GIBSON.

Alverstoke, Dec. 23rd, 1933.

To the Editor of THE LANCET

SIR,—When we speak of "climatic bubo," do we associate it with any particular climate—and if so which? or do we mean "bubo of unknown origin" (B.U.O.)? I ask as the bubos one sees in many places are very much alike. It is very difficult to differentiate climatic from venereal bubo; a man will deny intercourse and yet develop a hard sore after his bubo has gone, when examination may discover a small unknown lesion. Indolent bubos are apt to be associated with soft chancre, or perhaps with herpes—a virus disease, as we are now told. The bubo of syphilis is less likely to show periadenitis unless the primary sore is in the rectum, where there would be more chance of complicating infections. Should not every one who describes a climatic bubo on clinical grounds give us also at least a blood picture to help us to classify them correctly?

Forty years ago there were many of these cases at Chatham. They were opened and drained, inflammation spread along the connective tissue planes requiring further incisions, but ultimately they healed. In those days we did not boil our instruments; we just folded them up in leather pocket cases. In 1892 I saw these cases at Zanzibar. There they soon ceased, because, we thought, my predecessor had had a Sikh police patrol put on to chase the local women out of the bush round the canteen, after which they established themselves in houses in the town where they had better facilities for washing. In Hong-Kong (1897–98) I saw many cases in the depôt ship, none in the dockyard; the climate was the same but the men were older. I fancied it was best to remove the gland at once before periadenitis occurred. We had to encourage the men to stay on board for operation, but our sick mess had a Chinese cook, the commodore had just refitted the ship with large ports and good ventilation, and once jam was included in the ration there was no difficulty. Recovery averaged eight weeks in 1897, six weeks—if my memory is good—in 1898. In the latter year two men complained with very similar symptoms: one stayed, and in a month was sent home with a healing wound, the other was still running a temperature and waiting resolution. Unluckily iodine disinfection of skin had not yet come in. Later on ships were better cleaned and there were fewer subsidiary infections.

Maxima for bubo in the Navy were reached in 1856 and again in 1887 and 1889 (17·5 per 1000); there was a steady fall to the war (3 per 1000) and no traceable rise since. But the cases have to be looked for in the books: up to 1878 under "bubo," thence to 1889 under "diseases of absorbent system," and so on. The great rise in soft chancre about 1910 had no effect, nor the considerable drop in syphilis and soft chancre since the war. Dr. H. E. Neumann, of Jérémie, in Hayti, has told a most interesting story in this connexion (Arch. f. Schiffs- u. Tropen-Hygiene, March, 1931, p. 151). Jérémie is a port, cut off by great mountains from the rest of the island, with hardly any communications but by sea. He saw there perhaps three bubo cases a year. But a ship came in with an obvious carrier on board, and in the next two months he saw six cases of bubo among her acquaintance. The woman had small glands in the groin, no ulcer, a purulent vaginal discharge (no gonococci), an erosion on the cervix, and herpes at the ostium. Her friends had irregular fever up to 103° F., enlarged spleen, no suppuration in the bubo, no venereal ulcers, but herpes on the glands.

That is, I fancy, a unique record. But what climate is it that predisposes?

I am, Sir, yours faithfully,

Southborough, Dec. 21st, 1933. W. E. HOME.

ACHOLURIC JAUNDICE

To the Editor of THE LANCET

SIR,—With further reference to the case of acholuric jaundice with increased fragility of the red blood corpuscles appearing after splenectomy, that I described in your issue of Nov. 18th, it is of interest to record the fact that, acting on the suggestion of Dr. C. Price-Jones, we had a prolonged search made in the pathological department of the hospital and eventually recovered a film which was taken from the man before operation. Dr. Carey Smallwood had kindly made a Price-Jones curve from this film, which shows a definite microcytosis. This is strong evidence in favour of the diagnosis of acholuric jaundice.

Shortly after the report on my case was published, Dr. Marguerite Sheldon, of King's Norton, reminded me of a similar case that I had seen for her in December 1926. The patient was a woman of 34 who had had recurrent attacks of jaundice for a period of eight years. The spleen was enlarged and hard; the blood count at that time gave the following result (the Wassermann reaction was negative):—

Red cells ..	4,800,000	Polymorphs.. ..	53%
White cells ..	6,200	Small mononuclears	32%
Hæmoglobin ..	75%	Large mononuclears	13%
		Eosinophils.. ..	2%

The film appeared normal. Fragility test: partial lysis in 0·55 per cent. saline; complete in 0·4 per cent. A control series of tubes with normal blood gave an exactly similar result.

In view of the absence of increased fragility, I advised against surgical interference. Some months later she saw the late Mr. A. W. Nuthall at the Queen's Hospital, Birmingham, and was admitted for investigation. The report on the fragility while in the hospital (for which I am indebted to the present surgical registrar, Mr. R. C. Murray), was as follows:—

% NaCl	Hæmolysis
0·60	0
0·54	+ a trace
0·50	++ partial
0·40	+++ complete

There appears to be a slight increase in the fragility of the red cells in this specimen, but it is not as marked as one would expect to find in true acholuric jaundice.

Mr. Nuthall eventually removed the spleen and the patient made a complete recovery, and has never suffered from jaundice since. For the past six years she has been in perfect health apart from constipation. She very kindly came to see me at the General Hospital a few days ago and the blood count gave the following result (Dr. Jones):—

Red cells.. ..	4,285,000	Lymphocytes ..	41·2%
White cells ..	5,800	Hyal. and transit.	4·8%
Hb.	77%	Polymorph. ..	50·8%
Retic.: 1 per 1000 red cells (approx.)		Mast cells ..	1·8%
		Eosinophils ..	1·4%

Fragility of the red cells:—

Complete hæmolysis in 0·25% saline
Incomplete ,, ,, 0·30% ,,
Trace ,, ,, 0·55% ,,
No ,, ,, 0·60% ,,

Range.—0·35.

From this it is evident that the increased fragility which was not apparent before operation, has persisted for over six years.

I am, Sir, yours faithfully,

Edgbaston, Dec. 23rd, 1933. A. P. THOMSON.

MEDICAL NEWS

University of Cambridge

On Dec. 19th the following degrees were conferred:—

M.D.—J. B. A. Wigmore (by proxy), W. J. H. Montgomery, W. E. Mashiter, and P. G. Bentlif.

M.B. and B.Chir.—B. C. Murless, A. D. Briscoe, A. B. Eddowes, John Howell, C. A. Clarke, A. B. MacGregor, C. R. L'Estrange, and G. A. Miller.

M.B.—H. B. Trumper.

B.Chir.—M. P. Morel.

At recent examinations the following were successful:—

THIRD EXAMINATION FOR M.B. AND B.CHIR.

Part I., Surgery, Midwifery, and Gynæcology.—H. M. Applebaum, T. L. Barbour, A. M. Barrett, C. H. D. Bartley, R. L. Benison, J. R. Bodington, T. B. L. Bryan, K. L. Buxton, N. A. Buxton, R. J. Buxton, R. C. F. Catterall, C. M. Cavell, A. C. E. Cole, J. R. Dickinson, H. Drummond Robinson, J. F. Edwards, C. E. Elliott, W. A. Elliott, A. B. R. Finn, R. I. N. Greaves, G. D. Hadley, E. A. M. Halsted, R. S. Handley, L. A. Hawkins, N. T. Holden, M. J. Ingram, A. Innes, B. S. Jones, J. E. V. Jones, C. W. C. Karran, D. P. King, R. E. K. Levick, C. R. McLaughlin, C. J. Martin, L. C. Martin, J. D. Martin Jones, F. H. Masina, P. C. Matthew, H. B. May, S. G. Mayer, A. Miller, W. G. Q. Mills, J. S. Mitchell, L. O. Mountford, B. H. Page, C. G. Pantin, C. G. Parsons, W. H. Phillipps, G. D. Pirrie, G. T. Pitts, T. A. Ratcliffe, T. L. H. Shore, T. W. Smailes, M. S. Spink, D. J. Thompson, B. Thorne Thorne, A. S. Till, T. P. Ward, M. Williams, R. H. Winfield.

Part II., Physic, Pathology, and P [illegible]
Anderton, W. I. Bain, T. M. Bell, E. V. [illegible]
W. R. Billington, H. W. L. Broadber [illegible]
Brown, J. Cann, F. Clifton, F. H. Coleman, P. T. Cooper, H. E. Dimsdale, J. H. Dixon, J. R. Duffield, W. G. Evans, P. R. Goodfellow, G. P. Goodwin, S. J. Hadfield, R. S. Handley,

N. H. Harwood-Yarred, E. C. Herten-Greaven, R. Hill, P. L. Holliday, A. C. L. Houlton, T. B. Jones, C. W. C. Karran, A. Kekwick, W. H. Lewis, J. L. Lovibond, J. S. Mitchell, C. C. Morgans, F. C. Naish, W. F. Nicholson, E. G. Pyne, F. Ridelagh, G. C. D. Roberts, H. J. M. Robinson, K. Robson, A. C. Rumsey, T. W. Smailes, J. Smart, J. T. W. Spiridion-Kliszczewski, T. V. Tattersall, A. R. Thomas, E. D. Thompson, S. M. Thompson, G. E. H. Tisdall, F. B. Turner, T. P. Ward, W. E. Wells, A. Willcox.

University of Oxford

The appointment by the board of the faculty of medicine of Dr. K. J. Franklin, Fellow of Oriel College, as dean of the medical school was submitted to the house on Dec. 16th and approved.

University of London

At a meeting of the senate on Dec. 20th Mr. A. Bradford Hill, D.Sc., was appointed university reader in epidemiology and vital statistics at the London School of Hygiene and Tropical Medicine, where he has been working since 1923. The title of emeritus professor of eugenics was conferred on Mr. Karl Pearson, F.R.S., on his retirement from the Galton chair of eugenics at University College, and the degree of D.Sc. in odontology was conferred on Mr. E. C. Sprawson, lecturer in dental surgery and pathology at the London Hospital medical school. Prof. R. Ruggles Gates, F.R.S., Dr. G. F. Still, and Mr. C. P. G. Wakeley were appointed Fellows of King's College.

Forthcoming lectures.—Three lectures on the surgery of the nervous system with reference to the use and the elucidation of physiological phenomena will be given at St. Bartholomew's Hospital medical college at 5.30 P.M. on Jan. 9th, 10th, and 11th, by Prof. J. R. Learmonth, regius professor of surgery in the University of Aberdeen. —Six lectures will be given at Bedford College on Wednesday afternoons (Jan. 10th to Feb. 14th) at 5 P.M., by Dr. S. J. Cowell, professor of dietetics at St. Thomas's Hospital medical school, on factors in nutrition.—At University College, at 5 P.M., on Jan. 11th, 15th, and 18th, Dr. C. H. Best, professor of physiology in the University of Toronto, will lecture on the rôle of the liver in the metabolism of carbohydrate and fat; and at the same hour on Fridays, from Jan. 12th to March 16th, Mr. G. P. Wells will lecture on comparative physiology. No ticket is required for admission to any of these lectures.

Sir Cooper Perry and Sir Holburt Waring have been appointed members of the board of management of the London School of Hygiene and Tropical Medicine.

University of Wales

At recent examinations the following candidates were successful :—

M.B., CH.B.

D. R. Hughes, P. C. Lewis, D. M. Roberts, A. E. Williams, M. R. P. Williams, and Nellie M. Williams.

National University of Ireland

At recent examinations in University College, Cork, the following candidates were successful :—

M.D.

G. H. Mahony, D. J. O'Connell, and J. A. O'Sullivan.

M.B., B.CH., B.A.O.

John O'Connell (second class honours); C. J. Cantillon, N. A. Flaherty, Michael Flavin, P. J. Geoghegan, F. C. Hyland, M. J. Kennefick, John O'Connell, and J. P. O'Leary.

Part I.—Bartholomew Hutch.

Part II.—R. T. Ahern and R. A. Coughlan.

D.P.H.

Daniel Desmond.

Royal College of Surgeons of Edinburgh

At a meeting of the College held on Dec. 18th, with Dr. A. H. H. Sinclair, president, in the chair, the following candidates having passed the requisite examinations were admitted to the Fellowship :—

Robert Bewick, M.B. Glasg.; John Bright Birch, M.B. Adelaide; Leopald Brill, M.B. Leeds; Duncan Wilson Boucher, M.D., Q.U. Ontario; Cecil Thomas Ingram Clarke, M.B. Edin.; David Clark Dickson, M.B. St. Andrews; George Edwin Foreman, M.B. Melb.; Francis Penrose Forrest, M.B. Durham; Arthur Francis Hobson, M.B. Sydney; Robert William Hastings Jarvie, M.B. Glasg.; George Richard Kingston, M.B. N.Z.; Robert Laird, M.B. Glasg.; Henry Pattinson Lawson, L.R.C.P. Edin.; Arthur Leech-Wilkinson, M.B. Oxf.; Thomas James Berry Arnott MacGowan, M.B. Glasg.; William Alexander Mair, M.B. Aberd.; Daivosikamamy Kanaka Sabhesan, L.R.C.P. Edin.; Aboul Fetouh Shahin, M.B. Edin.; Alfred Norman Slater, M.B. N.Z.; Abdel Mohsen Soliman, M.R.C.S.; Geoffrey Alexander Bagot Walters, M.R.C.S.; and Francis Herbert Ward, M.B. Camb.

University of Sheffield

At recent examinations the following were successful :—

M.D.

Doris Butler and Ethel Skerritt.

FINAL EXAMINATION FOR M.B., CH.B.

Part I.—Kathleen M. Adamson, J. K. A. Beverley, M. B. Brody, John Hollingworth, H. J. Lee, Thomas Lodge, G. F. E. Ramsden, H. R. Vickers, and W. D. Wallace.

Part II.—B. A. Hamid.

University of Liverpool

At recent examinations the following candidates were successful :—

M.D.

W. J. Chisnall, F. J. H Crawford, R. P. Kemp, J. W. Pickup, A. L. Potter, A. Seddon, and J. F. D. Shrewsbury.

CH.M.

M. Silverstone.

M.CH. ORTH.

R. W. Agnew, H. Bell, J. Edelstein, and H. A. Sweetapple.

FINAL EXAMINATION FOR M.B., CH.B.

Part A (1924 *Regulations*).—H. H. L. Pentz.

Part B.—C. S. Anderson, J. D. Bryan, W. L. Dove, Dorothie M. N. Harris, A. G. Leigh, Joan M. Matthews, W. Milburn, J. Morgan, I. Pugh, W. E. Pycraft, D. Simpson, W. G. Timmis, and O. Walker.

Part I. (1929 *Regulations*).—J. L. Brown, C. F. Crampton, H. W. F. Croft, H. R. G. Davies, S. G. Griffin, F. Harrison, J. E. E. Hughes, G. B. Marsden, A. G. H. Menzies, and Moira Murray.

Part II.—J. L. Lanceley and F. A. Lomax.

D.T.M.

G. P. A. Amirtha Mayagam, N. E. W. Anderson, J. E. Armah, V. B. Athavale, L. F. Chan, F. M. Day, N. Din, R. Dyal, L. C. Feng, L. P. Greson, G [illegible] Ismail, G. D. Lehmann [illegible] C. M. Ross, Freni M. [illegible]

D.P.H.

D. F. Morgan.

Dr. G. D. Lehmann has been recommended for the Milne medal.

British Post-graduate Medical School

Dr. Herbert J. Paterson has been coöpted to the governing body of the British Post-graduate Medical School.

Society of Chemical Industry

The joint meeting of the food group of this society and the British Association of Refrigeration will now be held in the Institution of Mechanical Engineers, Storey's Gate, Westminster, London, S.W.1, on Jan. 24th at 8 P.M. The subject for discussion will be Refrigeration in the Food Industry.

James Mackenzie Institute for Clinical Research

The general purposes of the institute, which has now been accumulating records for 14 years, are recalled in an introduction to this year's report. It was established for the purpose of studying disease, with a view to its prevention. To this end the honorary medical staff of the institute, consisting of practitioners working in or near St. Andrews, and consultants from the university, investigate symptoms and minor maladies which interfere with efficiency or comfort, with the object of determining (*a*) the mechanism of their production; and (*b*) their bearing upon the future health of the patient; study the conditions under which the patient lives, and keep very full records, in order to discover the relation between environment, ailments, and subsequent disease. They are concerned especially with the early symptoms and predisposing causes of consumption and the early symptoms of ill-health in children. Post-graduate courses of instruction are held in methods of clinical research. The council record an increase of local interest in the activities of the institute in the year under review, during which more than 80 new cases and nearly 1000 additional notes were added to the files. Analysis shows that 60 per cent. of the records are complete, 15 per cent. require to be brought up to date, and 25 per cent. are incomplete, largely because patients have been lost trace of.

Individual members of the staff during the year have been investigating the alternating pulse, the state of the teeth in various age-groups of children, and the condition of children entering school life now compared with that found before the establishment of the child welfare scheme

NOTES, COMMENTS, AND ABSTRACTS

THE WILL OF THOMAS MORSTEDE: SURGEON TO HENRY THE FIFTH

BY R. R. JAMES

Thomas Morstede's name does not find mention in the "Dictionary of National Biography." What little is known about him is recorded in Flint South's "Craft of Surgery," edited by Sir D'Arcy Power, and in a paper by Prof. Gask in the *Proceedings* of the Royal Society of Medicine (Sect. of Hist., 1923, xvi.). This paper deals with the medical services of Henry the Fifth's campaigns. Morstede is also mentioned in the latter's Thomas Vicary Lecture (*Brit. Jour. Surg.*, 1930, xviii., 493). Although an epitome of the will has been published in the "Craft of Surgery" the will itself tells us a good deal about the man and is of such interest as to merit a fairly full transcription.

The testament is in Latin and the will in the quaint old English of the period. It is dated 20, April 1450. The Latin has been translated and the contractions in the English have been extended.

(P.C.C., Rous, 12.) "Thomas Morstede, esq. citizen and *cirugicus* of London. Soul to the almighty Creator, the Blessed Mary his mother and all Saints. Body to be buried in the church of St. Olave [1] in Old Jewry, next the wall before the image of St. Olave. I will that the costs of my funerales be honest and reasonable, with 16 torches and my exsequies ended and other funeral offices completed as well as the day of my trigintals.[1a] I leave 4 of the torches to serve in the church of Westbechesworth,[2] co. Surrey, other 2 in the church of St. Mildrede in the Poultry, 2 other in the church of Enefield.[3] 2 to the church of Stepull,[4] Essex, another in the conventual church of Stanesgate [5] and 2 to the hospital of the Blessed Mary of Elsyngspetal,[6] London. The vicar, chaplains and clerk of St. Olave to say daily for a month after my decease, *placebo et dirige cum lectionibus* according to the use of Sarum, with commendation of souls, and masses for the dead. For my soul, that of Juliana my wife, the souls of my father and mother, brothers, sisters, friends and benefactors, and the souls of Lady Margaret Swillyngton, William fitz-Henry,[7] esq., John Michel,[8] father of Elizabeth my wife and all whom I hold in merit, and the souls of the faithful dead. I will that the Master and brethren of the house of St. Thomas the Martyr de Acon and the Prior and Convent of Elsyngspitel, and the Rector, Chaplain, and clerks of St. Mildrede say *placebo, dirige*, etc. in their churches, and be reasonably rewarded for their labours.

"I leave a vestment of Ray [9] with apparel, a missal, a chalice and paten of silver, and a pair of candelabra of laten,[10] to serve in the church of Westbechesworth. I will 33s. 4d. to be disposed and distributed among 100 poor in Westbechesworth and Brokham, co. Surrey, to each 4d. I leave a vestment with a suit (*secta*) of copes and other apparel belonging to the like vestments, to be emended and given by the said Elizabeth my wife to the church of St. Olave *deserviltur* 100 marks sterling. I leave £100 sterling to be disposed and distributed by the said Elizabeth my wife, in celebrating masses, to poor servants, for relief of prisoners, and other feeble poor, in emending faulty roads and insufficient, and in other pious uses and works of charity, according to the good discretion of the abovesaid Elizabeth Item. I leave 33s. 4d. to be disposed and distributed to 100 poor of Bokstede and other adjoining places, the most in need, to each 4d. The like sum to 100 poor of Stepil,[4] and 20s. to 60 poor of Enefield. I leave to Andrew Mansyon my servant, 100 marks a Basolard [11] mounted in silver, and a small silver pyx. To Robert Bryttende my apprentice, 10 marks sterling and my English book bound with two *latitudinibus*, all my instruments of chirurgery, with all things belonging to them, my horn mounted in silver and a great silver pyx. Item I leave to Agnes Nasshe, 5 marks sterling. To Margaret Elys xls. sterling. To John Cooke my servant 45s. To Thomas Spenser 26s. 8d. Margaret Bidawe my servant 20 marks to her marriage if she marry by the advice and consent of Elizabeth my wife. To John of Yorke 3s. 4d. To each of my servants at Enefield 3s. 4d. I forgive and release to Edmund Burcetre late my apprentice, the 10 marks he owes for his apprenticeship, and 20s. sterling. I leave to William Sydney a harness with one armature, being in the keeping of my armourer. I leave to John Beford my sword mounted in silver. The residue after my debts paid, and the presents of my will completely fulfilled to Elizabeth my wife as reasonable dower to distribute as she pleases for my soul. Elizabeth my wife, John Stokes, clerk, Robert Tanfield, John Rympyngden, executors, and I leave to each 5 marks for their labour and constitute William Bolton, supervisor.

"First y wol that Andrew Mansyan my servant have while he dwelleth in Engelonde, lyvying Elizabeth my wiffe, xiiis. ivd. to be taken at iiii termes of the yere, in the Cyte of London usuel by evyn porcyons of thy annuyte of xls. whiche the Prior and Convent of Elsyngspitel in London by her dede under her common seal in tyme passed graunted to the seide Elizabeth my wife, to be taken yerly of theyr lands and tenements in the parisshe of Seynt Mildrede in the Pultry in London at four termes aforeseide. Also y wille that al tho that with me by me or to myn use ben enfeoffed in all the londes and tenements with thappurtenaunces in the parisshe of Seynt Oleof in the olde Jurye in London, the whiche y purchased sumtyme of William Brigge and his cofeffees, anone [12] after my decesse graunt by her dede sufficient in lawe, unto the seide Andrewe my servaunt an annuel rent of xiiis. ivd. sterlinge, to be taken yerly duryng his lyffe if he so longe dwel in England, of and in the same londis and tenements with thappurtenaunces, at iiii termys of ye yere in ye Cyte of London usuel by evyn porcyons under condicyon suying [13] that is for to sey that as long that the seide Andrew pesibly with owten pechement[14] or interrupcyon may take have and enioy the seide annuel rent of xiiis. iiiid. *to* be *taken of* yt seid londes and tenements in ye seid parisshe of Seynt Oleoff dwel in suspense and in no wise be tenable in the newe tyme. Also y wil that al tho that with me by me or to myn use be enfeoffed in ii marks of yerely rent service of the Prior of Newerke in the counte of Surrey with the homage Releef and other services of the seide Prior with thappurtenaunces and in alle ye londs and tenements and service clepyd Elsynges with thappurtenaunces in Enefield in the counte of Middlesex. And in all my londes and tenements with thappurtenaunces in the parysshe of Seynt Oleoffe in the Olde Jury in London whiche y sumtyme purchased of William Brigge and of other persons his cofeffees, anone after my decesse make a sufficient estate of the same rent homage reliefe and other service of ye seide prior of Newerke and of the seide londes and tenements rents and services in Enfield and of the seide londes and tenements in the seide parisshe of Seynt Oloaff . . . to the forseide Elizabethe my wiffe to have and to holde to her and her heires for evermore . . . also y wil that al tho that to myn use be enfeoffed in my tenement in Chelmesforde . . . make a lawful astate and graunt to Robert Briggend myn apprentice, to have and to holde al the seide tenement . . . to ye aforeseide Robert and to his heires . . . an annuel rent of xvid. to be yeven to the parson and wardeynes of the churche of Westbechesworthe in the shire of Surrey to be taken to theym and to there successores for evermore if and al my tenemente in the parisshe of Seynt Oleof with thappurtenaunces which were sumtyme the Lord FitzWaters at ye feste of Ester yerely to the reparacyon and amendement of a chapel in the seid churche of Westbecheswortbe in the whiche my fader and my moder ben buried. Also y wole that myn seide executores and feffes ordeyne an obite to be kept in the churche of Seynt Oleof aforeseid . . . for my sowle and the sowles of Juliana sumtyme my wife my fader my moder my brethern my susters . . . and ordeyne . . . an honeste preste to synge for my sowle and other sowles aforeseyde and for the good state of Elizabeth my wife Maister John Stokes clerke and Dame Margarete Michel moder of the seide Elizabeth, while they levyn and for their sowles when they passen owte of this wordle in the chapel by me of newe bild and edyfied an the northside of the seide churche of Seynt Oleof duryng XX yeres next suying [13] after my deces also y wol that myne executores and my Feffes of and in myn tenemente with the gardynes . . . in Seynt Kateryne by Syde Crichurche [15] within Aldgate . . . be yoven demised and amorteysed to the Vicar Wardeyns and parrishyns of the seide churche of St. Oleof . . . to fynde with the issues . . . the light abowte the sepulchre in the seide churche. Yeven at London the XX day of the moneth of April M'CCCC'L. *Probatum.* M. Zenobio Commissary. 8, June 1450."

It will be seen that this document gives us an unusual amount of information. Morstede was a citizen of London, he was twice married; and in the absence of any mention of children I think we may assume that he left no issue by either of his two wives. His parents were buried in a chapel at Betchworth, so they were probably important people, and Morstede was probably brought up in Surrey. In Manning and Bray, Hist. of Surrey, vol. 2, it is stated that there is a brass, with Latin inscription in the South Chancel of Betchworth, to Thomas Morsted and Alianora his wife. He was evidently well-to-do, for he had property in London, at Enfield, and in Essex, and it seems probable that the Mr. Thomas Morstede who witnessed the will of Thomas, Duke of Exeter, dated 1426, is the surgeon. It may seem odd at first sight that a surgeon should be in possession of vestments, missals, chalices, &c.; but Mr. H. E. Powell has reminded me of the fact that many important people at that date had a private chapel in their house and this would account for the bequests. We learn the names of two apprentices. The quaint spelling of the will is typical of the times and gives such documents a flavour all their own.

I am indebted to Mr. Harvey Bloom for the transcript.

REFERENCES

1. St. Olave Upwell in Jewry. Stow says that "T. Morsted esq. Chirurgion to Henry fourth, fift and sixt, one of the sheriffes, 1436, builded a faire newe ile to the enlargement of this church on the North Side thereof wherein he lyeth buried, 1450." It was burnt in the Fire of London.
1a. trigintals: more usually called a trental; a service of 30 masses.
2. Westbechesworth: the modern Betchworth, near Reigate.
3. Enefield: Enfield.
4. Stepull: Steeple, in the hundred of Dengie, Essex.
5. Stanesgate: a priory of Cluniac monks near Steeple.
6. Elsyngspetal: a hospital for 100 poor blind men founded by William Elsing, mercer of London, within Cripplegate, A.D. 1332.
7. William Fitz-Harry, of Cosin Lane, of whose will, dated 1431, Morstede was an executor.
8. John Michel: possibly the John Michaell, seriant-at-Armes, 1415, who was buried in St. Botolph without Aldgate. (Stow.)
9. Ray: a striped cloth.
10. Laten: brass.
11. Baselard: a dagger.
12. anone: anon, shortly.
13. suying: ensuing.
14. pechment: impeachment.
15. St. Katherine Christchurch or Creechurch.

HOURS OF WORK FOR ADOLESCENTS

THE new Shops Bill, foreshadowed in the King Speech to regulate the hours of employment of juveniles in and about shops, is overdue. About 200,000 children between 14 and 16 go to work in some capacity or other in shops, where they may legally work up to a 74-hour week. The Select Committee on Shop Assistants, which reported in 1931, found that while many adults work excessively long hours in this trade, the juveniles nearly always work even longer being expected to get the place ready in the morning and to clean it up at night. Case after case was reported to them of a 10 or 11 hour day for the children; of work lasting till 9 P.M. on a Saturday and of Sunday work as well, while van and delivery boys and girls sometimes face a full 12 hour day.

The report of the inquiry into the catering trade (1929) showed that bell boys and lift boys in hotels commonly work for 60 hours every week; and there are many other occupations with unregulated hours where children are in demand. Garage boys, laboratory assistants and cinema attendants may, and often do, work excessive hours, and messenger boys and girls (of whom there are 75,000 in London alone) are similarly unprotected. The National Advisory Council for Juvenile Employment made a special report upon this subject in 1932, which showed clearly that children are often obliged to work far harder and longer than their fathers and mothers. The Shops Bill will do something to improve the position, and it may be hoped that when it is passed official attention will be given to some of the other occupations now followed by young people.

REMOVAL OF THE NORMAL SPLEEN

THOSE who wish for information about the effect of splenectomy on the blood of normal mammals, will find it in a review by Dr. E. B. Krumbhaar, published last year.[1] His paper states clearly the common sources of confusion in the discussion of this problem: chief among them is the fact that the results of removing a diseased spleen in various forms of anæmia are often held to throw light on the relation of the normal spleen to blood formation and destruction. From consideration of the evidence concerning splenectomy and the blood picture of normal dogs, rabbits, guinea-pigs, and men, Krumbhaar draws certain conclusions. (Rats are excluded owing to their liability to develop bartonella anæmia after splenectomy.) In the normal mammal, he finds, splenectomy causes a true mild temporary anæmia that varies both in individuals and in species, and also in time of appearance, degree, and duration. The anæmia is accompanied by an increase in the reticulocyte count and an increase in the resistance of the erythrocytes. Some observers have reported also an increase of Jolly's bodies and nucleated red cells. This observation Krumbhaar himself could not confirm. He believes that the anæmia is due to a loss with the spleen of a property which aids erythrocyte formation, such as conversion of the iron or broken down erythrocytes into hæmoglobin. He was able to confirm previous work which had shown that there is an increased loss of iron after splenectomy. The post-operative anæmia was not, however, prevented by diets rich in iron. He found no evidence for the hypothesis that the spleen exerts an inhibitory effect upon erythropoiesis in the bone-marrow. He concludes that the most carefully conducted experiments show that the thrombocytosis following splenectomy is more prolonged than other post-operative thrombocytoses. There is not enough evidence to decide whether it is due to removal of an organ concerned with platelet destruction or of an organ that inhibits platelet formation. The work of Dr. S. P. Bedson is unfortunately not discussed in this connexion.

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[1] Amer. Jour. Med. Sci., 1932, clxxxiv., 215.

"THE OUTSTRETCHED FINGER"

'HE middle course between giving too much and too le help to the child in his process of development is icult to find. Dr. Rushforth symbolises this happy in in "The Outstretched Finger," the title of a le book, which she prepared for study circles in child chology for mothers of young children in Calcutta, has now offered to a wider audience. Dr. shforth takes Dr. William McDougall's classifica- 1 of 14 primary instincts—fear, anger, mother-love, iosity, sex, food-getting, self-assertion, submission, rding, crowding, building, disgust, the cry for p, laughter—and gives a short analysis of each, ether with suggestions as to the attitude which ents should adopt towards their manifestation children. True freedom, the writer maintains, is y possible because discipline is inevitable, and edom of this kind should be given to children from y early days. A young baby wants to be able to ve about in bed, to raise his head, to roll, to crawl. e mother may restrain these impulses by tying him vn, or encourage them by supplying safe oppor- ities for rolling and crawling on a rug spread on floor or the grass. It requires much more courage, ience, and self-control to provide an environment freedom, but the reward comes quickly in happy, l-balanced, resourceful children, helping to make world a better place to live in. Dr. Rushforth nks that punishment imposed from without is ely necessary, but if a punishment is decided on it uld be quickly over. Exceptional naughtiness is en more amenable to grey powder than to ralising. Though it does not contain anything ticularly new or arresting, this book is written h a good sense and balance which are evidently outcome of personal experience.

PNEUMOTHORAX SIMPLEX

As the spontaneous, non-tuberculous pneumo- rax is often overlooked and rarely fatal, estimates its frequency are apt to vary within a wide range, d with the speculative insight of different observers. r once it is admitted that this type of pneumo- rax may be, and indeed often is, almost symptom- s, there is really no limit to guesses concerning incidence. It is, in fact, easier to be sceptical out, than to demonstrate the exaggeration in, hypothesis that many of us, at some period in our es, have had air in one or other of our pleural ities. Coming down to earth and the tangible dence of the post-mortem room, we find a paper pneumothorax simplex by Dr. H. Kjaergaard,[2] o in 1932 discovered a symptomless pneumo- rax by accident in two patients who had died of ne intercurrent disease. Both were hospital cases, h had been submitted to a physical examination the chest, but in neither had the more or less nplete collapse of one lung been detected during . The first patient was a man, aged 61, suffering m a glioma of the cerebrum. The terminal ections were bronchitis and broncho-pneumonia. st mortem a dry pneumothorax was found on the t side, the lower lobe of the left lung being almost npletely collapsed. The lung was emphysematous, t no scars or pleural adhesions were found. attered over the surface of this lung were several sicles, the largest of which was as big as a walnut. e second patient was a man, aged 79, admitted hospital for an operation for cataract. The eration was followed by a rise of temperature d purulent expectoration. An examination of the showed distension of the right side. The atory sounds over this side were feeble, and no were heard. Over the left lung, dullness, ial respiration, and râles were demonstrable. concluded antemortem that he was suffering emphysema with broncho-pneumonia or a flare-up of tuberculosis in the left lung. Post mortem the left lung was found to be the seat of broncho-pneumonia. The right lung was almost completely collapsed, and both the visceral and parietal pleural surfaces were dry. On the surface of the lung were several vesicles, the largest almost as big as a fist. In neither of these cases was there any macroscopic or microscopic evidence of active tuberculosis.

METABOLIC SUNDAYS

IN a comprehensive discussion[1] of the action of special forms of diet on bodily processes, Dr. A. E. Lampé, who is director of the Neuwittelsbach clinic in Munich, has a note on the zig-zag diet, introduced a year or two ago by Dr. Carl v. Noorden. As a result of his lifelong study of dietetics v. Noorden came to lay emphasis on the value of interrupting a diet, limited in one direction, by an occasional day in which the opposite diet is taken. The meat eater, he finds, is often benefited by one or two vegetarian days in the week, the vegetarian by an occasional meat day. In this way something more than mere relief of monotony may be obtained. C. v. Noorden considers that the relaxation gives opportunity for certain reserves to be filled up; for a retention (say) of carbohydrate, fat, mineral, or vitamin, enough to tide over a lean period. He has called these interpolated days, rather happily, "metabolic Sundays."

THE DISCOVERY OF CHLOROFORM

IN a paper read before the Liverpool Medical Institution on Dec. 14th, Prof. W. J. Dilling reviewed the evidence relating to David Waldie's share in the discovery of the anæsthetic properties of chloroform. "Chloric ether," an alcoholic solution of chloroform, was first used therapeutically in this country, he said, by Dr. Richard Formby in Liverpool, and was tried as an anæsthetic agent between 1846 and 1847 by Jacob Bell, Surgeon-Major Furnell, Holmes Coote, and Sir Wm. Lawrence. Dr. Waldie was evidently acquainted with these trials of the impure chloroform, and while a chemist to the Apothecaries Hall in Liverpool he succeeded in preparing a pure chloroform with the high specific gravity of 1500. He was thus in a unique position to recommend chloroform, during a visit to Scotland in October, 1847, to his former fellow-student Simpson, and to offer to send him supplies. A fire in the Liverpool laboratory prevented a prompt dispatch of the chloroform, and Simpson, having presumably imparted Waldie's method of preparing pure chloroform, obtained in Edinburgh a sample which, during the experiment on Nov. 4th, 1847, proved a successful anæsthetic. The facts were announced by Simpson on Nov. 10th, and published in pamphlet form on the 13th. The first pamphlet Simpson sent to Waldie with a letter saying: "I am sure you will be delighted to see part of the good results of our hasty conversation"; yet the pamphlet merely mentions in a footnote that Waldie had first "named" it, amongst others, as worthy of a trial. Waldie, in a lecture to the Literary and Philosophical Society of Liverpool on Nov. 29th, gave the details which establish the fact that his recommendation of pure chloroform was based on a knowledge of its characters and suitability for trial. Prof. Dilling believes therefore that his name should have a place of high honour in the early history of chloroform.

Miss Abraham, daughter of John Abraham, a Liverpool chemist, has offered to present several letters written to her father by Waldie. One of these, dated July 8th, 1870, reads as follows:—

> "Though I have never said much on the subject I was never satisfied with the recognition my share in the matter got, because I could never admit that the acknowledgement made by Dr. Simpson was at all adequate. He did as little as he could possibly do, and the statement

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[1] Outstretched Finger. Notes on Child Psychology for and Nurses. By Winifred Rushforth, M.B., Ch.B. n and London: Oliver and Boyd. 1933. Pp. 72. 6d.

[2] Acta Med. Scand., 1933, lxxx., 93.

[1] Jahreskurse für ärztliche Fortbildung, August, 1933, p. 11.

he made was not a fair one. . . . Pity that the place had been burned down at the time of Simpson's enquiries, I should in all probability have made the discovery myself."

The statements by an American lady that her dog anæsthetised itself from a saucer lying in Waldie's house at Linlithgow, and that Waldie had previously experimented with cats about 1845 are considered by Prof. Dilling to be mythical. They were refuted by both Dr. Waldie and his brother George, and were unknown to Mr. Abraham in Liverpool, where Waldie was at that date working.

Dr. R. J. Minnitt recalled that in a presidential address to the Liverpool Society of Anæsthetists on Jan. 27th, entitled Who Discovered Chloroform—Simpson or Waldie? Dr. A. J. O'Leary paid tribute to Waldie, and suggested that the society should consider some commemoration of his work.

The ANGLO-FRENCH DRUG COMPANY (11 and 12, Guilford-street, London, W.C.1) have sent us a copy of their A.F.D. block diary for 1934, measuring about 6 by 4½ in., with a page to a day of nearly blank paper for memoranda. It is bound in black cloth and inside the front cover is a clearly printed tabular calendar for the year. It serves as a useful accessory to the writing table.

SAFETY X RAY FILM.—Messrs. Kodak Ltd. announce that their "Dupli-tized" film is now supplied on a safety (cellulose acetate) base, at the same price as on the standard (nitrate) base. Users of this safety film are saved the expense of the special storage arrangements required for cellulose nitrate products.

IODINE EQUILIBRIUM.—In Dr. R. A. McCance's lecture in this series published last week, the amount of iodine needed by children to maintain equilibrium should have been given (p. 1440) as 0·00015 g. per day.

Appointments

Certifying Surgeons under the Factory and Workshop Acts: ELLIOTT, C. M., L.M., L.Ch. Dub. (Ulceby, Lincoln); HOSKINS, W. D., L.R.C.P. Lond., M.R.C.S. (Eye, Suffolk); and MAYNE, W., L.R.C.P. Lond., M.R.C.S. (Hornsea, East Riding).

Vacancies

For further information refer to the advertisement columns

All Saints Hospital, Austral-street, West-square, S.E.—Hon. Anæsthetist.
Belgrave Hospital for Children, Clapham Road, S.W.—H.P. At rate of £100.
Blackburn, Queen's Park Institution and Infirmary.—Res. Jun. Asst. M. O. At rate of £150.
Brighton, Royal Sussex County Hospital.—Hon. Med. Reg.
Bristol Eye Hospital.—Asst. Res. H.S. At rate of £100.
Bristol Royal Infirmary.—Cas. H.S. At rate of £100. Also H.P.'s, and H.S.'s. Each at rate of £80.
City of London Hospital for Diseases of the Heart and Lungs.—Anæsthetist.
Connaught Hospital, Walthamstow, E.—Res. H.P. At rate of £100.
Coventry, Coventry and Warwickshire Hospital.—H.S. for Aural and Ophth. Depts. At rate of £125.
Devon County Council.—Deputy County M.O. £720.
East Sussex County Mental Hospital, Hellingly, Sussex.—Sen. Asst. M.O. £650.
Folkestone, Royal Victoria Hospital.—Sen. and Jun. Res. M.O.'s. At rate of £150 and £120 respectively.
ty.—H.S. for Tilbury Hospital.
Iospital.—H.S. £150.
-Res. M.O. At rate of £156.
iseases of the Chest, Bro
S.W.—H.P. At rate of £50.
Hospital of St. John and St. Elizabeth, 60, Grove End-road, N.W.—Res. H.P. At rate of £100.
Huddersfield Royal Infirmary.—Two H.S.'s. Each at rate of £150.
Liverpool, Fazakerley Sanatorium.—Asst. Res. M.O. £200.
London County Council.—Two Asst. M.O.'s. £600.
Manchester, Christie Hospital and Holt Radium Institute, Withington.—Res. M.O. for Radium Therapy Dept. At rate of £150. Also Res. Radiological Asst. for X ray Dept. At rate of £275.
Manchester, St. Mary's Hospitals.—Res. Obstet. O. £175. Also Two H.S.'s. Each at rate of £50.
Metropolitan Hospital, Kingsland-road, N.—Cas. O. At of £100.
Middlesbrough, Holgate Municipal Hospital.—Jun. Res. £170.
Middlesbrough, North Riding Infirmary.—Sen. and Third At rate of £200 and £125.
Middlesex County Council.—Asst. Dental Officer. £500.
National Temperance Hospital, Hampstead-road, N.W.—H
al Surgeon. Also H
ck Children.—H.P.
dren.—Res. M.O. £1
£350.
Hospital.—Two H.S
Oldham, Boundary Park Municipal Hospital.—Res. Asst. At rate of £200.
Queen's Hospital for Children, Hackney-road, E.—Physician Skin Dept. Also Temporary Asst. Surgeon.
Royal Society of Medicine, 1, Wimpole-street, W.—Nor Gamble Fund and Research Prize. £1000.
Sheffield, Children's Hospital.—Res. M.O. £175. Also H.P. rate of £100.
Sheffield, Jessop Hospital for Women.—H.S. At rate of £100.
Sheffield, Royal Infirmary.—Clin. Asst. to Aural Dept. £30
ensary, High-street, N.—Res. M.O. £2
South Hants and Southampton Hospita
Wandsworth Borough Council, S.W.—Asst. M.O.H. and for Maternity Home. £500.
West London Hospital, Hammersmith, W.—Res. Anæsthe At rate of £100.
Wolverhampton and Midland Counties Eye Infirmary.— £150.
Wrexham and East Denbighshire War Memorial Hospita Res. H.S. At rate of £150.
York, The Retreat.—Sen. Asst. M.O. £400.

The Chief Inspector of Factories announces vacant appointm for Certifying Factory Surgeons at Thame (Oxford), at Helmsley (York., N. Riding).

Births, Marriages, and Deaths

BIRTHS

YOUNG.—On Dec. 17th, at Sunnymount, Malone Park, Belf the wife of Dr. J. S. Young, of a son.

MARRIAGES

TIPPETT—DAVIDSON.—On Dec. 18th, quietly, in Lond Gordon Oxburgh Tippett, F.R.C.S., of Russell-court, to Hilda Margaret Davidson, of Russell-road, W.

DEATHS

BOURNE.—On Dec. 18th, Henry James Frederick Bour L.R.C.P., L.R.C.S. Edin., L.R.F.P.S. Glasg., of Thornba Redhill, Surrey, aged 65 years.
FAHMY.—On Dec. 18th, at hi
N.W., Ahmed Fahmy, M
HIBBARD.—On Dec. 20th, in
L.R.C.P., L.R.C.S., of
PAINE.—On Dec. 21st, at his
Shanklin, I.O.W., Alexander Paine, M.D. Lond., D.P. formerly director of the Cancer Research Departm Cancer Hospital, Fulham-road, S.W., aged 67.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices Births, Marriages, and Deaths.

Medical Diary

Information to be included in this column should reach in proper form on Tuesday, and cannot appear if it reac us later than the first post on Wednesday morning.

SOCIETIES

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.
FRIDAY, Jan. 5th.—8.30 P.M. (at the Hotel Rembran Brompton-road), Discussion on Swelling of the Le to be opened by Dr. W. R. Thrower and Dr. A. Beddard. Preceded by dinner at 7.30 P.M.

CHILD-STUDY SOCIETY, 29, Tavistock-square, W.C.
MONDAY, Jan. 1st.—5 P.M. (at University College, Gow street, W.C.), Dr. Eric Pritchard: The Physical a Psychological Education of Infants.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT, NOSE, AND HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Jan. 5th.—4 P.M., Mr. A. Ryland: Demons of Museum Specimens.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
THURSDAY, Jan. 4th.—5 P.M., Dr. P. O. Ellis Dr. Sholto McKenzie Pathological Investig

LONDON SCHOOL OF DERMATOLOGY, St. John's Ho 49, Leicester-square, W.C.
TUESDAY, Jan. 2nd.— P.M., Dr. H. D. Haldin- the R
THURSDAY.—5 P.M., Dr J. M. H. MacLeod: Rin Infections.